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FINAL INTERIM MEASURES WORK PLAN FOR SOLID WASTE MANAGEMENT UNIT 23  
BATTERY SHOP BUILDING 36 NSA CRANE IN  
6/25/2014  
TETRA TECH

# NAVFAC Atlantic Biological Resource Services

Contract: N62470-08-D-1008; Task Order: F272

June 25, 2014



## Final Interim Measures Work Plan for SWMU 23 - Battery Shop Building 36, Naval Support Activity Crane, Indiana



Prepared for:  
NAVFAC Midwest  
201 Decatur Avenue, Building 1A  
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**FINAL  
INTERIM MEASURES WORK PLAN  
SWMU 23 – BATTERY SHOP BUILDING 36**

**NAVAL SUPPORT ACTIVITY CRANE  
CRANE, INDIANA**

**NAVFAC ATLANTIC  
BIOLOGICAL RESOURCE SERVICES CONTRACT**

**Submitted to:  
Naval Facilities Engineering Command Midwest  
201 Decatur Avenue  
Building 1A, Code EV  
Great Lakes, Illinois 60088**

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**JUNE 2014**

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## ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
amsl	above mean sea level
BaP	benzo(a)pyrene
BC/BC	Big Clifty/Beech Creek
bgs	below ground surface
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	Contract Task Order
cy	cubic yard
DRMO	Defense Reutilization and Marketing Office
E&S	erosion and sediment
EMAC	Environmental Multiple Award Contract
ESA	Endangered Species Act
ESO	Explosives Safety Office
FBL	fixed-base laboratory
FTMR	Field Task Modification Request
GIS	geographic information systems
GRO/ERO/DRO	gasoline range organics/extended range organics/diesel range organics
HSWA	Hazardous and Solid Waste Amendments
IAS	Initial Assessment Study
IDEM	Indiana Department of Environmental Management
IM	Interim Measure
IMWP	Interim Measures Work Plan
LDPE	low-density polyethylene
MCG	media cleanup goal
mg/kg	milligrams per kilogram
MSDS	Material Safety Data Sheet
NACIP	Navy Assessment and Control of Installation Pollutants
NAVFAC	Naval Facilities Engineering Command
Navy	Department of the Navy
NEESA	Naval Energy and Environmental Support Activity
NFA	no further action
NSA	Naval Support Activity

NSWC	Naval Surface Warfare Center
NWSCC	Naval Weapons Support Center Crane
OICC	Officer in Charge of Construction
O/WS	oil/water separator
PAH	polynuclear aromatic hydrocarbon
PCBs	polychlorinated biphenyls
ppb	parts per billion
ppm	parts per million
PR/VS	Preliminary Review/Visual Site Inspection
PRG	preliminary remediation goal
QA	Quality Assurance
RBSL	risk-based screening level
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SOP	Standard Operating Procedure
SSL	Soil Screening Level
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
Tetra Tech	Tetra Tech, Inc.
TC	toxicity characteristic
TOC	total organic carbon
TPH	total petroleum hydrocarbons
UCL	upper confidence limit
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Services
UST	underground storage tank
VOCs	volatile organic compounds
XRF	X-Ray Fluorescence

## **1.0 INTRODUCTION**

### **1.1 PURPOSE AND SCOPE**

The purpose of this document is to present the Interim Measures Work Plan (IMWP) for the Battery Shop Building 36, also known as Solid Waste Management Unit (SWMU) 23, at Naval Support Activity (NSA) Crane located in Crane, Indiana. The IMWP includes a description of the excavation and off-site disposal of contaminated soil planned within SWMU 23. The draft IMWP was prepared for the United States Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC) Midwest by Tetra Tech, Inc. (Tetra Tech) under Contract Task Order (CTO) F272 of the NAVFAC Atlantic Biological Resource Services Contract Number N62470-08-D-1008.

### **1.2 FACILITY DESCRIPTION AND LAND USE**

NSA Crane is located in the southern portion of Indiana, approximately 75 miles southwest of Indianapolis and 71 miles northwest of Louisville, Kentucky, immediately east of Crane Village and Burns City (Figure 1-1). The facility encompasses 62,463 acres (approximately 98 square miles), most of which are located in the northern portion of Martin County. Smaller portions of NSA Crane are located in Greene and Lawrence Counties. NSA Crane is located in a rural, sparsely populated area. Most of NSA Crane is wooded, and the surrounding area is wooded or farmed land.

NSA Crane provides material, technical, and logistical support to the Navy for equipment, shipboard weapons systems, and nonexpendable ordnance items. In addition, NSA Crane supports the Crane Army Ammunition Activity with production, renovation, storage, shipment, demilitarization, and disposal of conventional ammunition.

The rural area communities that surround NSA Crane in south-central Indiana are in a period of transition from an economic base of agriculture, mining, and quarrying to an economy built on manufacturing and service industries. The patterns of settlement, population statistics, and median income are similar throughout the region.

SWMU 23 is located in the north-central portion of NSA Crane and encompasses approximately 6.5 acres (Figure 1-1). SWMU 23, as presented on Figure 1-2, is bounded on the north and west by heavily wooded areas with steep hillsides.

Surface elevations range from approximately 755 feet above mean sea level (amsl) in the area of Building 36, to approximately 675 feet above amsl in the northwestern area of the Site. Building 36 is the only building located within SWMU 23, and is located in the southeastern area of the Site (Figure 1-2).

There is no state or local planning within the vicinity of NSA Crane. The only zoning and land use regulations are found in the municipalities within the region. None of these municipalities are close enough to have an impact on NSA Crane. None of the areas adjacent to NSA Crane are zoned, and zoning is not anticipated in the future. SWMU 23 is approximately 2.8 miles southeast of the nearest NSA Crane property boundary (Figure 1-1). There are no known current or likely future land use or community actions under consideration or proposed at this time for off-base land near SWMU 23. SWMU 23 is contained completely within NSA Crane, and likely future land use at areas surrounding the SWMU 23 site is expected to be limited to military and industrial uses.

### **1.3 REGULATORY SUMMARY**

#### **1.3.1 NSA Crane**

Following promulgation of the Resource Conservation and Recovery Act (RCRA) hazardous waste regulatory program, NSA Crane filed notification and application to operate as a RCRA hazardous waste treatment, storage, or disposal facility in October 1980. USEPA granted interim status to the NSA Crane RCRA units, subject to operating requirements and applicable technical standards found in Title 40 of the Code of Federal Regulations (CFR), Part 265.

Corrective action programs established as part of the 1984 RCRA Hazardous and Solid Waste Amendments (HSWA) required NSA Crane to address past releases of hazardous waste or hazardous constituents at SWMUs. Accordingly, NSA Crane submitted a Hazardous Waste Management Report (HMTTC, 1985), and a RCRA Facility Investigation (RFI) was conducted to characterize the potential for releases of hazardous waste or constituents from approximately 100 SWMUs identified during the RCRA Facility Assessment (RFA) (A.T. Kearney, 1987).

On December 23, 1989, the United States Environmental Protection Agency (USEPA) issued the federal portion of the final RCRA Part B Permit for NSA Crane to the Navy. USEPA renewed the permit in 1995. The Indiana Department of Environmental Management (IDEM) now has responsibility for the Federal Corrective Action Permit. IDEM renewed the Corrective Action Permit on October 18, 2001.

### **1.3.2      SWMU 23**

From about 1940 to 1975, approximately 2,000 gallons of battery acid (presumably sulfuric acid) per year were discharged onto the sloped area behind the Battery Shop (Building 36). The specific points of discharge are unknown; therefore, the entire edge of the ridge near SWMU 23, and the downslope areas were considered to be potentially affected by these discharges. In addition, miscellaneous debris and waste oils containing lead, sulfates, and oily water were also discharged in the same area [Naval Energy and Environmental Support Activity (NEESA), 1983]. This debris area was situated north of Building 36 as shown on Figure 1-2, covered an area approximately 400 feet wide and 125 feet long, and extended to the bottom of the ravine. A small intermittent stream is located at the bottom of the ravine. The area is rugged and densely wooded, with rock formations protruding from the slope causing sudden drops in elevation of 12 to 14 feet. The debris was unevenly scattered throughout the Site.

A site reconnaissance was performed by Tetra Tech on July 13, 2011 and involved the visual inspection of the exterior areas of SWMU 23. Building 36 was not entered, and the locations of the oil/water separator (O/WS) and the battery storage area at that time were observed. Photographs 1 and 2 (below) show the exterior of Building 36, and the surrounding pavement on the western side of the building.



**Photograph 1: View of rear of Building 36, facing southeast**



**Photograph 2: View of rear of Building 36, facing southwest**

To the right of the forklifts shown in the photographs is a steep hillside that is highly vegetated with undergrowth and sizable trees (Photograph 3). Two concrete structures that appear to have been stormwater headwalls were identified along the hill slope west of the building. No significant debris and no stressed vegetation were identified during the visit. Photograph 4 shows one of the two headwalls.



**Photograph 3: View of steep hill slope west of Building 36**



**Photograph 4: View of one of the headwalls located along the hill slope west of Building 36**

SWMU 23 has been investigated previously. The following is a listing of the investigations and documents relevant to the SWMU 23 - Building 36 Battery Shop:

- Initial Assessment Study (IAS) of Naval Weapons Support Center, Crane, Indiana; NEESA, Port Hueneme, California. May 1983, (NEESA, 1983)
- Preliminary Review/Visual Site Inspection (PR/VS) Report of Naval Weapons Support Center, Crane, Indiana. March 1987, (A. T. Kearney, Inc., 1987)
- Interim Measures Report, SWMU 23/00 Battery Shop, Voluntary Interim Measures, Naval Surface Warfare Center (NSWC) Crane, Crane, Indiana, (Morrison Knudsen, 2000)
- Final Sampling and Analysis Plan, Resource Conservation and Recovery Act Facility Investigation SWMU 23 - Battery Shop Building 36, Naval Support Activity Crane, Crane, Indiana, August, (Tetra Tech, Inc., 2012)
- Field Task Modification Request (FTMR) No. 1 to the Sampling and Analysis Plan, Resource Conservation and Recovery Act Facility Investigation SWMU 23 - Battery Shop Building 36, Naval Support Activity Crane, Crane, Indiana, (Tetra Tech, Inc., 2013a)



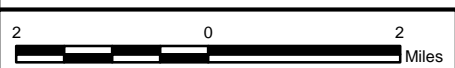
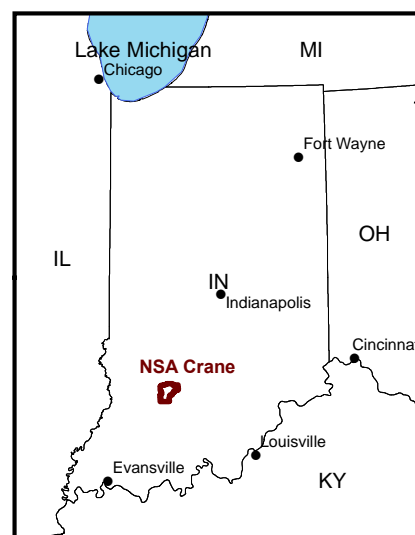
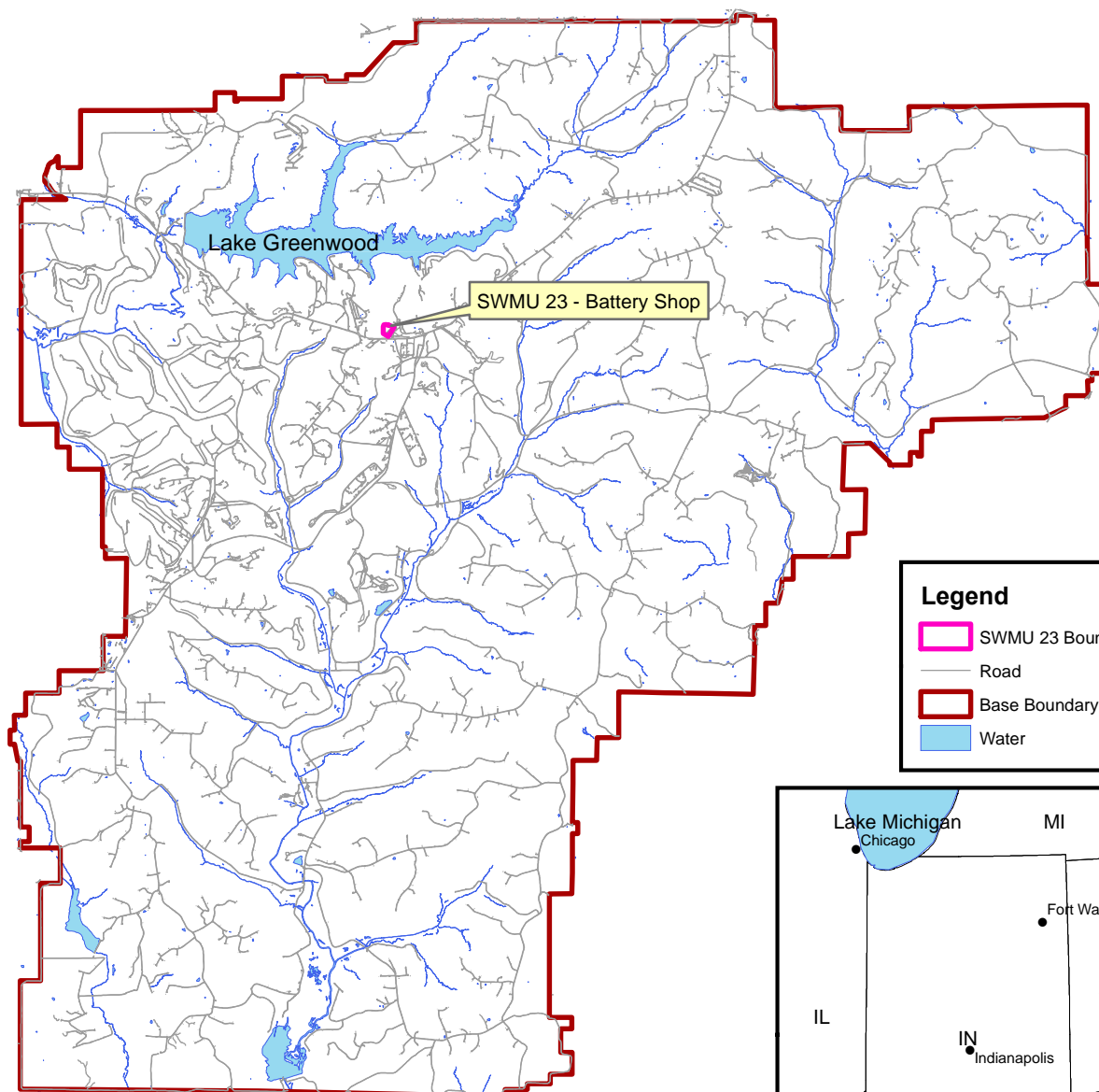
- Draft Resource Conservation and Recovery Act Facility Investigation for SWMU 23 - Battery Shop Building 36, Naval Support Activity Crane, Crane, Indiana, (Tetra Tech, Inc., 2013b)
- FTMR No. 2 to the Sampling and Analysis Plan, Resource Conservation and Recovery Act Facility Investigation SWMU 23 - Battery Shop Building 36, Naval Support Activity Crane, Crane, Indiana, (Tetra Tech Inc., 2013c).


A summary of the environmental investigations and previous Interim Measures (IMs) conducted at SWMU 23 is provided in Section 2.0.

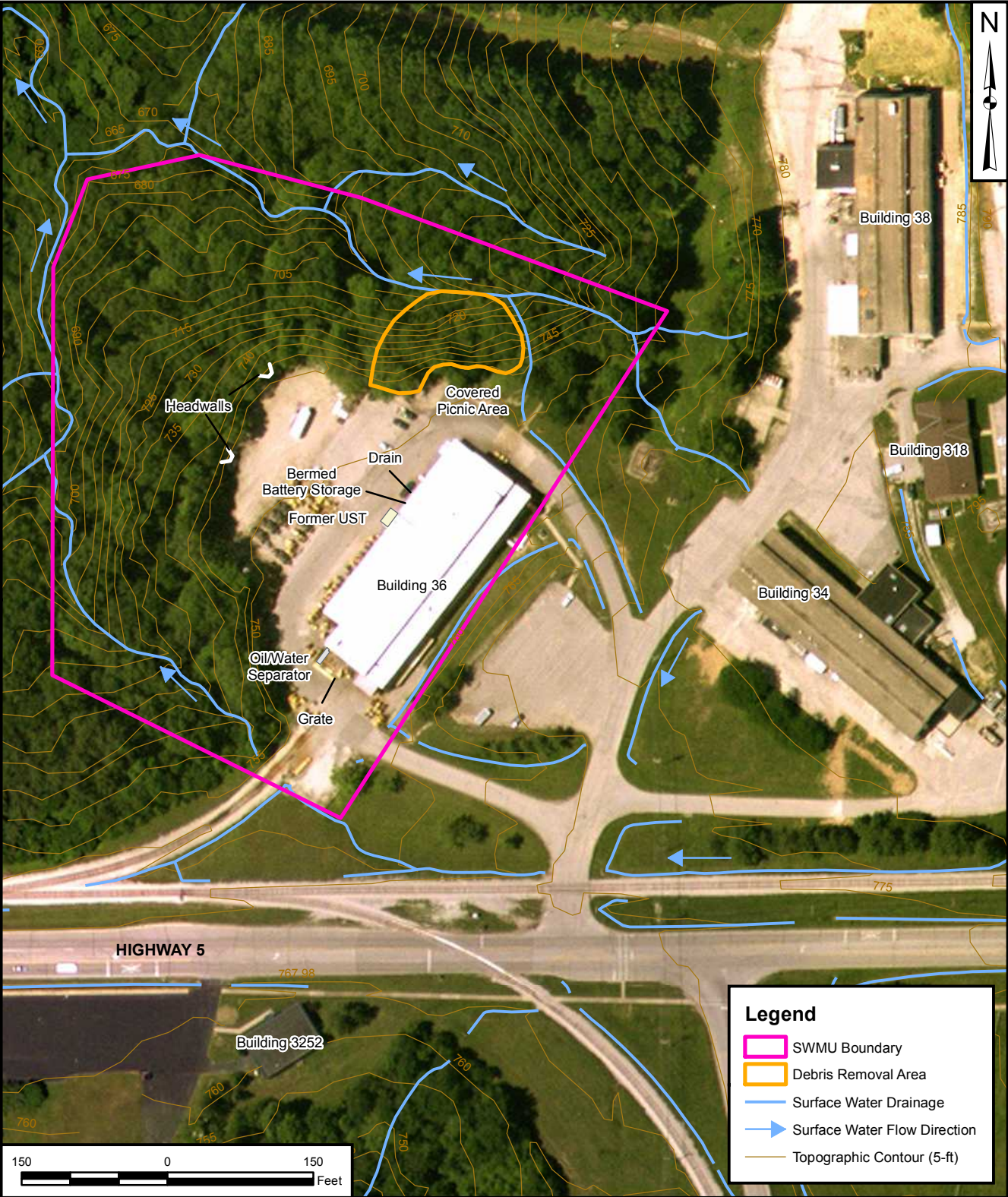
#### **1.4 REPORT ORGANIZATION**

The following highlights the information contained in the remainder of this document:


- Section 2.0 summarizes site characteristics, including site description, summary of environmental investigations conducted at SWMU 23, and nature and extent of contamination.
- Section 3.0 presents the IMWP.
- Section 4.0 presents erosion and sediment (E&S) control features proposed for the IMWP described in Section 3.0.



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REVISED BY J. ENGLISH	DATE 01/09/13		APPROVED BY _____	DATE _____	
SCALE AS NOTED			FIGURE NO.	REV 0	
			FIGURE 1-1		



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K. MOORE	08/05/11
CHECKED BY	DATE
J. DUCAR	08/14/13
REVISED BY	DATE
D. COUCH	08/14/13
SCALE	
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 **TETRA TECH**

SITE MAP

SWMU 23 - BATTERY SHOP BUILDING 36

NSA CRANE

CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
3539	F27Q
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FIGURE NO.	REV
FIGURE 1-2	0

## **2.0 SWMU 23 SITE SUMMARY**

### **2.1 SITE SUMMARY**

A general description of SWMU 23 is provided in Section 1.0. The following subsections describe the physical conditions of areas to be addressed in the IMWP. These descriptions are excerpts from the SWMU 23 Draft RFI Report (Tetra Tech, 2013b).

#### **2.1.1 Topography**

The terrain is predominantly rolling with moderately incised stream valleys throughout, and occasional flat areas in the central and northern portions of NSA Crane. The elevations across NSA Crane range from about 500 feet amsl to about 850 feet amsl. Topographic relief in the Crawford Uplands generally ranges from 100 to 350 feet. Greater relief exists in the eastern part of NSA Crane near the Chester Escarpment (Murphy and Wade, 1998a, 1998b).

SWMU 23 (Battery Shop Building 36) is located in the north-central portion of NSA Crane, and encompasses approximately 6.5 acres (Figure 1-2). The operational portion of SWMU 23 is located within a relatively flat area at the top of a steep slope that is bounded on the north and west by heavily wooded areas with steep hillsides. Surface elevations range from approximately 755 feet above amsl in the area of Building 36 to approximately 675 feet amsl in the northwestern area of the Site.

#### **2.1.2 Surface Drainage**

The surface drainage at NSA Crane has formed a dense, dendritic pattern throughout the installation. Most of the major streams flow in a general southward or southwestward direction. Seven primary creeks in five drainage basins carry surface water off the installation, where they eventually drain into the East Fork of the White River, and then to the Wabash River to the southwest.

Surface water drainageways are located along the north, west, and southwest periphery of SWMU 23 (Figure 1-2). These perennial drainageways converge and flow to the north-northwest, eventually discharging to Lake Greenwood, located approximately 3,200 feet to the north.

### **2.1.3      Site Geology and Soil**

The unconsolidated overburden deposits at NSA Crane generally consist of two types: Quaternary and Pleistocene age alluvial and colluvial deposits near the floodplains of primary streams, and unconsolidated residual soils and loess on the sides and tops of ridges. Residual soils at NSA Crane were derived from the underlying sedimentary rocks of the Lower Pennsylvanian Raccoon Creek Group, and the Upper Mississippian Stephenson and West Baden Groups. These soils consist of clay, silt, sand, and fragmented and/or partially weathered bedrock. The residual soils developed on the ridge tops and upper side slopes of the ridges were derived from the weathering of Pennsylvanian strata.

Based on the classification scheme developed in the base-wide background soil study (Tetra Tech, 2001), the soils encountered at SWMU 23 fall into two different soil groups. The surface soils [0 to 2 feet below ground surface (bgs)] all belong to Soil Group 3 (Alluvial, Mississippian, and Pennsylvanian). The subsurface soils (2 to 10 feet bgs) belong to Soil Group 8 (Pennsylvanian subsurface Clay and Silt).

### **2.1.4      Site Hydrogeology**

The bedrock underlying NSA Crane is Pennsylvanian and Mississippian sandstones, limestones, and shales overlain by Quaternary age deposits. The SWMU 23 area is mapped as being underlain by the Mansfield formation of the Raccoon Group. The Mansfield formation consists of alternating beds of dark shale, sandstone, mudstone, siltstone, and discontinuous coal units. Depth to groundwater at SWMU 23 is unknown, but is expected to be present in the bedrock at less than 20 feet bgs, based on other site investigations at NSA Crane. According to the conceptual hydrologic model for SWMU 23, groundwater flow at the site is presumed to flow to the west and north based on local topography, with groundwater flow most likely discharging north to Lake Greenwood.

### **2.1.5      Water Supply**

Groundwater at SWMU 23 is not currently used, and there are no future use plans for groundwater. Lake Greenwood, an 800-acre, man-made, spring-fed lake in the northern portion of NSA Crane (Figure 1-1) is the main source of drinking water at NSA Crane and is expected to remain as such in the future. Lake Greenwood is located approximately 3,200 feet north of SWMU 23.

## **2.2      PREVIOUS INVESTIGATIONS AND INTERIM MEASURES**

An interim measure and several investigations have been conducted at SWMU 23, and are summarized below.



### **2.2.1      Initial Assessment Study**

The IAS, conducted in 1983 by NEESA (NEESA, 1983), identified the Battery Shop as Site 1. The IAS stated that Battery Shop personnel performed maintenance operations on electric vehicles (primarily forklifts) for use at NSA Crane. Approximately 150 gallons per month (approximately 2,000 gallons per year) of spent battery acid, from 1940 to 1975, were discharged onto a hillside behind the Battery Shop (Building 36). Based on the nature of this operation, it is assumed the battery acid was sulfuric acid. After 1975, the practice was to neutralize the acid in a tank, then discharge the neutralized liquid into the industrial sewer system. Visual inspection of the disposal area at the time of the study identified approximately ten 10-gallon barrels and 50 5-gallon barrels at the base of the hill. The report did not state whether the barrels were empty, nor did it identify the nature of actual or potential contents.

Wastewater containing oil originating from the maintenance of non-electric forklifts was processed through an oil/water separator adjacent to the building. Approximately 50 gallons per month of oil was removed from the separator for disposal/recycling.

The IAS indicated that one small solvent tank of unknown size and type of solvent stored was located in Building 36 at the time of the report; the IAS Report also stated that prior to 1980, 10 to 20 gallons of solvent were drained out of the tank twice per year and dumped down the hillside behind the building. The specific areas of dumping are unknown.

Surface water drainage from the hillside flows into surface water pathways, which discharge to Lake Greenwood, located approximately 3,200 feet to the north. The report stated there was a potential for lead salts to migrate to Lake Greenwood. Lake Greenwood is the local drinking water source for NSA Crane; therefore, the report recommended that surface soil and sediment be sampled and evaluated for lead.

### **2.2.2      Preliminary Review/Visual Site Inspection Report**

The PR/VSI Report (A.T. Kearney, 1987) identified the "Battery Shop Dump" as an area of concern. The report indicated that this unit consisted of an open hillside north of the Battery Shop (Building 36) with no containment or release control provisions. Spent battery acid and waste oil from forklift servicing were disposed of by allowing them to flow down the hill and into a stream which flows to Lake Greenwood (NSA Crane's drinking water supply reservoir). The specific areas of disposal are unknown; therefore, the entire edge of the ridge near SWMU 23 was considered to be the disposal area. The wastes disposed in

the unit were spent battery acid containing lead and sulfates, and waste oil and oily water from forklift servicing within Building 36. A sump was installed in 1980 to replace the open dumping of acids.

The PR/VSİ Report concluded that the potential for release to soil/groundwater in the past was high as a result of the open dumping of liquid waste on a hillside. However, the Navy Assessment and Control of Installation Pollutants (NACIP) study reported that no significant levels of lead (i.e., associated with battery acid) have been found in the soil of the unit. The potential for release to surface water in the past was also high as a result of the open dumping of liquid wastes on a hillside whose runoff flows into Lake Greenwood. However, the NACIP study reported that no significant levels of lead have been found in the lake water. The potential for release to air in the past was low because of the nature of the wastes disposed, and because the mechanism of disposal involved releases of liquids and solids to surface soil. The potential for generation of subsurface gas is low because of the open nature of the unit and the wastes managed. The PR/VSİ Report recommended soil should be sampled on the hillside to verify the conclusions of the NACIP report.

### **2.2.3 Interim Measures Report (2000)**

A voluntary IM action was conducted at SWMU 23 in February 1996, and documented in the IM Report, SWMU 23/00 Battery Shop (Morrison Knudsen, 2000). This IM was conducted to remove and dispose of surface debris present in the "Battery Shop Dump" on the hillside north of Building 36. Figure 2-1 shows the location of the IM debris removal area. The type and condition of surface debris was primarily of a construction or domestic waste nature; and included concrete, reinforcement bar (rebar), metal cans, drums, chairs, tires, and battery components. Materials were removed using both manual and mechanical methods. A track backhoe was used to clear a path to lower a skid-mounted box down the slope, and to extract large pieces of concrete or concrete-encased material. The majority of the surface debris was removed by hand and placed into the box. Soil was removed from the materials and left in place prior to placing the debris into the box. The box was then pulled up the slope and the debris was transferred to a roll-off box for transport off-site to Rumpke Landfill in Bloomington, Indiana for disposal. Approximately 4.5 tons of debris (including construction debris such as large sections of preformed concrete slabs, drums, cans, filters, and tires) were removed from the Site. A metal detector was used to identify debris covered by leaves or buried at a shallow depth in the area from which debris was removed. There was no soil removed from the site. After all debris was removed from the area, no backfill was placed. The contour of the area was essentially undisturbed.

Following the completion of debris removal, confirmation sampling was performed. Eight soil and two surface water samples were collected and analyzed by an approved off-site laboratory. The confirmation samples were collected on February 22, 1996. The samples were analyzed for Appendix IX parameters.

The IM Cleanup Levels for soil analysis used for the site were taken from USEPA Memo RCRA Corrective Action Guidance: Human Data Quality Levels for RFI Projects by Karl E. Bremer, dated June 18, 1994, and were used as the interim cleanup levels in the absence of site-specific health risk-based levels. The soil samples contained concentrations of various metals at levels greater than the interim cleanup levels. One sample, 23/00-011, also contained the organophosphorus pesticide methyl parathion at a concentration 1 part per billion (ppb), which was greater than the associated IM cleanup level. The soil samples did not contain any other target analytes greater than the IM cleanup levels. The two surface water samples (23/00-012 and 23/00-014) did not show any exceedances of an interim cleanup level.

The report concluded that although the goal of the interim remedial action was met (i.e., removal of debris), confirmation sample analytical results showed that several contaminants were present in the soil at SWMU 23 at concentrations greater than the generic, interim cleanup levels. Therefore, it was recommended that an RFI be performed to determine and delineate the extent of contamination in the soil at the Site.

#### **2.2.4 RFI Sampling (October/November 2012)**

##### **Soil Sampling**

Soil samples were collected downgradient from potential source areas [i.e., OWS and former suspected underground storage tank (UST)], along the hillside downgradient of the building, and in the area where dumping historically occurred.

Twenty-three surface soil samples (from borings 23SB001 through 23SB023) and 12 subsurface soil samples (from borings 23SB001 through 23SB006 and 23SB024 through 23SB026) were collected (see Figure 2-1). All surface soil samples were submitted to the fixed-base laboratory (FBL) for analysis of: volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH) gasoline range organics/extended range organics/diesel range organics (GRO/ERO/DRO), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), metals, sulfate, and pH. All subsurface soil samples were submitted to the FBL for analysis of: VOCs, TPH GRO/ERO/DRO, PAHs, and metals.



All soil sample locations are presented on Figure 2-1.

A geophysical investigation was conducted to determine whether the suspect UST was present. The results showed no evidence that the tank was till present.

### **Drainageway Surface Water and Sediment Sampling**

Six surface water samples (23SW001 through 23SW006) and six collocated sediment samples (23SD001 through 23SD006) were collected from six discrete locations within surface water drainageways at SWMU 23. All sediment samples were collected at a depth of 0 to 0.5 foot bgs. No samples were collected from location 23SW/SD007 because of the lack of sufficient sediment volume (bedrock was at the surface), and surface water was not present.

The surface water samples were submitted to the FBL for TPH GRO/ERO/DRO, hardness, and total and dissolved metals analyses. The majority of the sediment samples were submitted to the FBL for VOCs, PAHs, PCBs, metals, and total organic carbon (TOC) analysis. Sample 23SD009-0006, collected in May 2013, was only analyzed for VOCs, PAHs, and metals.

All sediment and surface water sample locations collected during the RFI are presented on Figure 2-2.

### **Oil/Water Separator Sediment Sampling**

One sediment sample (23SD008-0006) was collected from the base of the O/WS (see Figure 2-2). The sample was collected at a depth of approximately 0 to 4 inches below the top of the residue at the base of the structure. The structure is approximately 5 feet deep.

This sediment sample was submitted to the FBL for analysis of VOCs, TPH GRO/ERO/DRO, PAHs, PCBs, metals, and TOC.

## **2.2.5 Post-RFI Supplemental Soil Sampling Investigations**

Based on the laboratory results from the October/November 2012 field event, supplemental surface and subsurface soil samples were collected in May 2013 as proposed in the FTMR No.1 to determine the horizontal extent of PAHs and metals (i.e., Pb) contamination at SWMU 23. Eleven surface soil samples and eight subsurface soil samples were collected from boring locations 23SB027 through 23SB037. All samples collected from 23SB027 through 23SB032 were submitted to the FBL for PAH analysis only.

The samples collected from 23SB033 through 23SB037 were submitted to the FBL for metals (i.e., Pb) analysis only.

Additional supplemental soil sampling was required to further refine the areas of contamination for potential excavation; therefore, supplemental surface and subsurface soil samples were collected in March 2014 as planned in the FTMR No. 2 to improve the delineation of the vertical and horizontal extent of PAHs and metals (lead) contamination at SWMU 23. Sixty-four soil samples were collected from boring locations 23SB002, 23SB003, and 23SB038 through 23SB075. The subsurface soil samples collected from former locations 23SB002 and 23SB003 were to determine the vertical extent of the PAH contamination at those locations; samples collected from new boring locations 23SB048 through 23SB075 were to determine the extent of the PAH contamination; and samples collected from new boring locations 23SB038 through 23SB047 were to delineate the lead contamination at the site. An additional seven samples were collected in April 2014 from six locations (23SB076 through 23SB081) to delineate lead contamination around former sample location 23SB010. Discrete soil samples were collected from four different soil textures encountered at location 23SB072 and analyzed by a geotechnical laboratory to provide site-specific soil density data for SWMU 23. The density data for SWMU 23 are described in more detail in Appendix A of this IMWP.

All soil sample locations from the post-RFI sampling events are presented on Figure 2-1. Figure 2-3 presents the comprehensive sampling results of the soil PAH concentrations in benzo(a)pyrene (BaP) equivalents concentrations for the samples collected at SWMU 23. Figure 2-4 presents the comprehensive results of the soil lead concentrations detected in soil samples collected at SWMU 23. Appendix A described the field program for the collection of the RFI and post-RFI delineation samples. Appendix B contains the analytical results for the RFI and post-RFI samples collected at SWMU 23.

## **2.3 PROPOSED APPROACH TO ACHIEVE RISK REDUCTION**

### **PAH Risk Reduction and Mitigation in SWMU 23 Soil**

This section presents the steps necessary to reduce human health and ecological risk to acceptable levels. PAH concentrations in soil at SWMU 23 present human health risk in excess of  $1 \times 10^{-4}$ . Total risk is presented as BaP equivalents concentration, and an acceptable risk is within the range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ , or 0.015 to 1.5 milligrams per kilogram (mg/kg) BaP equivalents concentration. The media cleanup goals (MCGs) for PAHs are reduction of contaminant concentrations so that the risk from residual contamination in surface and subsurface soil is within the acceptable risk range for residential receptors.

The discrete areas where PAH contamination has been delineated in soil are located in different zones within SWMU 23.

The risk-based screening level (RBSL) of  $1 \times 10^{-4}$  for residential human health exposure is used as the point of departure for evaluating total cancer risks in this assessment. A RBSL corresponding to a risk level of  $1 \times 10^{-4}$ , or 1.5 mg/kg BaP equivalents concentration, was used to evaluate the total BaP equivalent concentrations for this project. Based on the collected soil samples from the SWMU 23 soils on the slope west of Building 36 and the BaP equivalents concentrations calculated for those soil samples, there is PAH contamination present within the SWMU 23 footprint above the human health screening level of 0.015 mg/kg BaP equivalents. Because the primary screening level of 0.015 mg/kg BaP equivalents for the human health screening level of  $1 \times 10^{-6}$  is particularly low (15 parts per billion), multiple soil samples collected from SWMU 23 contained detectable levels of PAHs which exceeded this screening level established for the human health risk level of  $1 \times 10^{-6}$ .

However, if all or most of the soil areas with BaP equivalents concentrations greater than the screening level established for the human health risk level of  $1 \times 10^{-5}$  (0.15 mg/kg) were removed from the former disposal areas, then the majority of the remaining soil areas should fall somewhere between the projected residential cancer risk levels of  $1 \times 10^{-6}$  (0.015 mg/kg) and  $1 \times 10^{-5}$  (0.15 mg/kg) for BaP equivalents in the remaining site soil as shown in the table below.

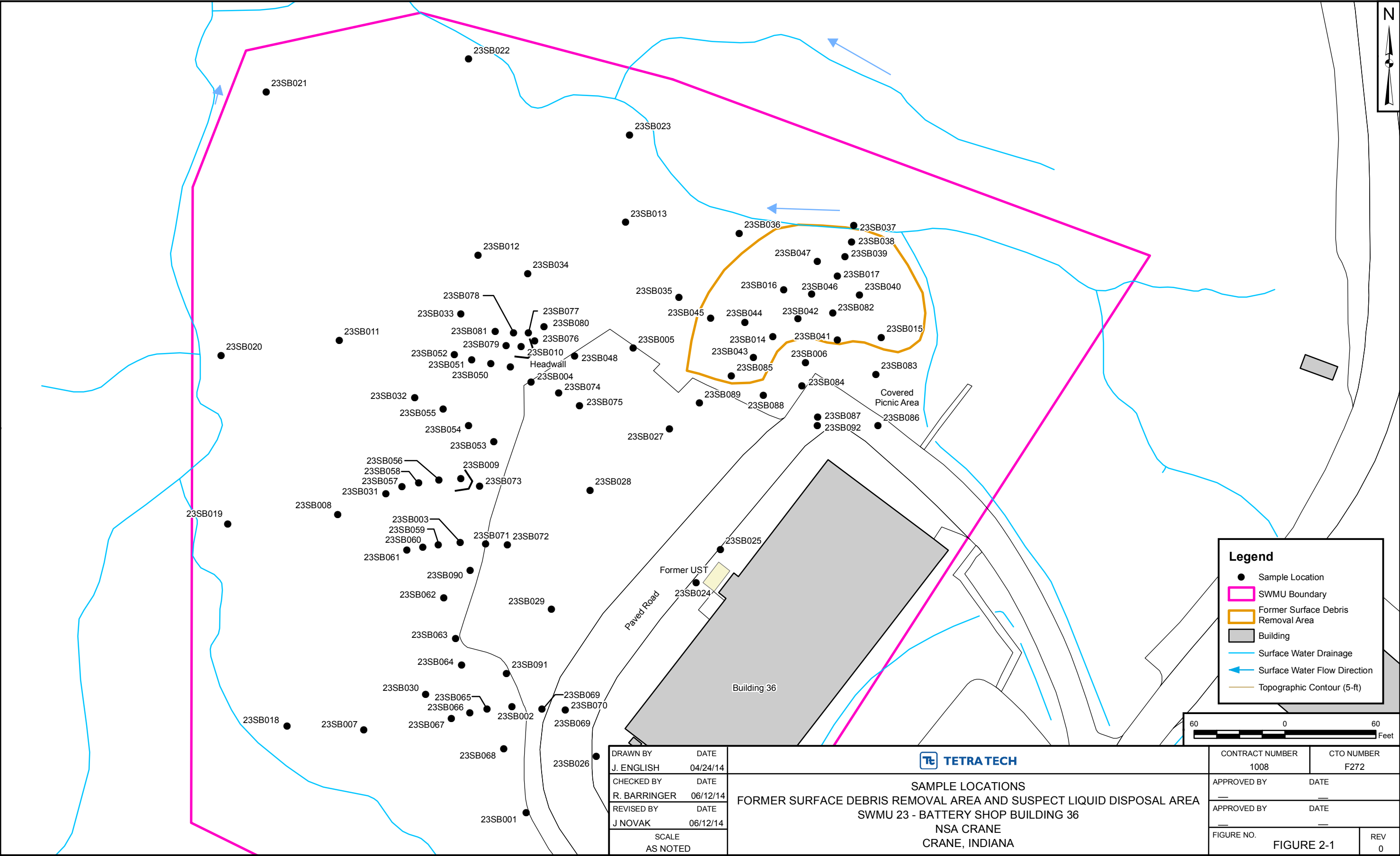
BaP Equivalents Concentrations in Soil Samples	Total Residential Cancer Risk Levels
< 0.015 mg/kg	$< 1 \times 10^{-6}$
0.015 mg/kg to 0.15 mg/kg	$1 \times 10^{-6}$ to $1 \times 10^{-5}$
0.15 mg/kg to 1.5 mg/kg	$1 \times 10^{-5}$ to $1 \times 10^{-4}$
> 1.5 mg/kg	$> 1 \times 10^{-4}$

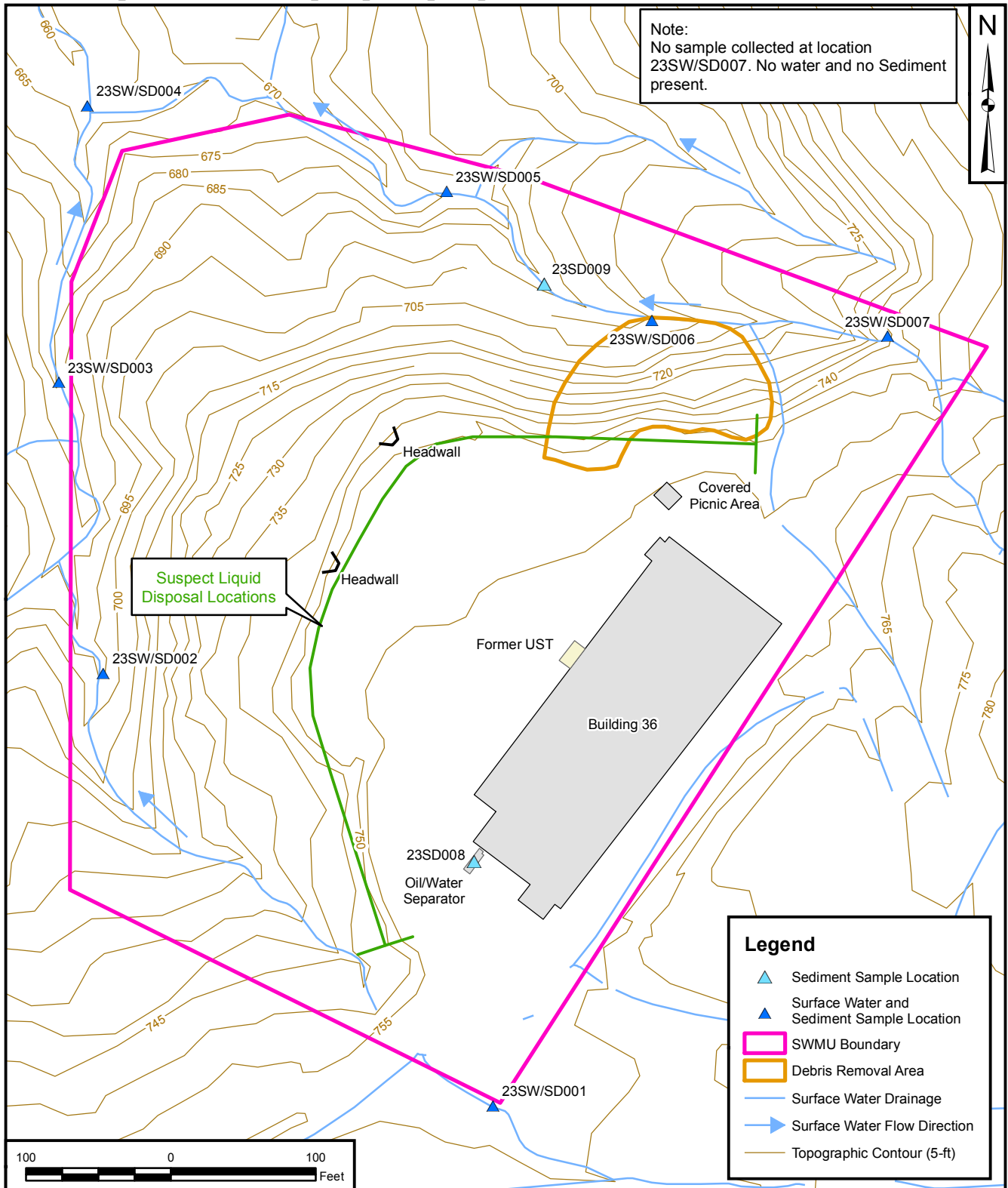
Based on this approach, soil areas with higher BaP equivalents concentrations and corresponding higher total residential cancer risks should be targeted for excavation and removal. Removal of soil with higher BaP equivalents concentrations would reduce the overall residential cancer risk in soil to levels between the residential cancer risk levels of  $1 \times 10^{-6}$  (0.015 mg/kg) and  $1 \times 10^{-5}$  (0.15 mg/kg).

#### Lead Risk Reduction and Mitigation in SWMU 23 Soil

A goal of the SWMU 23 IMWP is to reduce human health and ecological risks from soil lead concentrations to more acceptable levels. The media cleanup standard (MCS) for lead in soil at

SWMU 23 is 400 mg/kg. This MCS will be used as a threshold level to guide the removal of lead-contaminated soil at SWMU 23. The focused removal of lead-contaminated soils in excess of the MCS will reduce human health risk to acceptable levels and result in acceptable ecological risk.

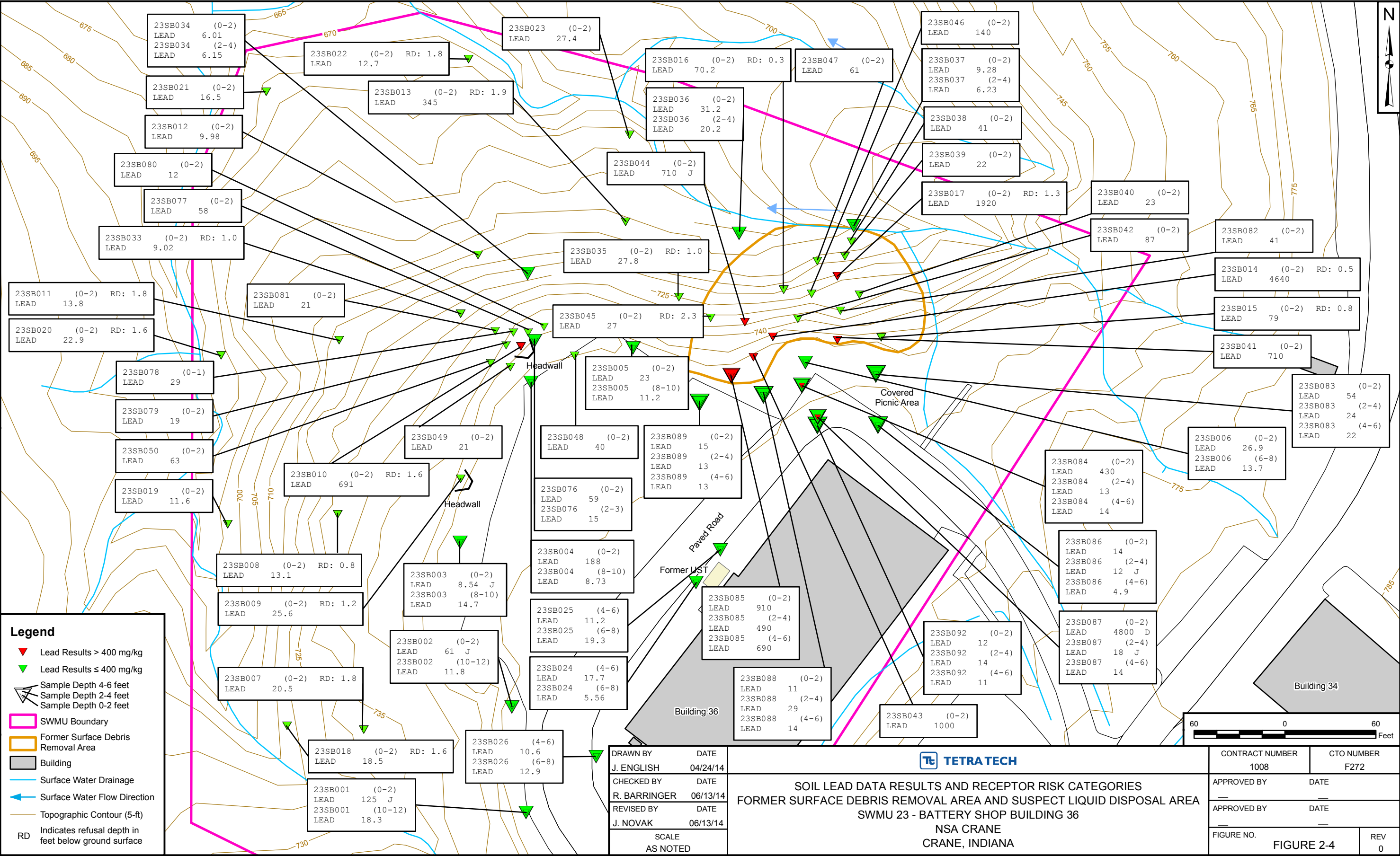




DRAWN BY K. MOORE CHECKED BY J. DUCAR REVISED BY J. NOVAK SCALE AS NOTED	DATE 08/05/11 DATE 06/13/14 DATE 06/13/14	<p><b>TETRA TECH</b></p>	CONTRACT NUMBER 3539 CTO NUMBER F27Q
SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS SWMU 23 - BATTERY SHOP BUILDING 36 NSA CRANE CRANE, INDIANA			APPROVED BY _____ DATE _____ APPROVED BY _____ DATE _____ FIGURE NO. 2-2 REV 0









### **3.0 INTERIM MEASURES WORK PLAN**

This section describes the interim measures for removal of contaminated soil at SWMU 23. The interim measures for SWMU 23 include the excavation and off-site disposal of soil containing PAH compounds (expressed as BaP equivalents) and lead at concentrations above specific risk levels, in order to reduce average site-wide risks. This IMWP describes the limits and method of removal and off-site disposal of contaminated soil.

#### **3.1 DESCRIPTION OF THE INTERIM MEASURES**

This IMWP specifies the removal of contaminated soil from six general areas at SWMU 23 that contain either PAH compounds derived from waste residues, or lead derived from previous battery handling and battery management operations performed at Building 36. In addition, this IMWP specifies restoration of these general excavation areas. Removal of soils from these areas will reduce the site-wide exposure risk for PAHs and lead to levels allowing unrestricted use. The volumes presented for excavation are in-place estimates. It is anticipated that these volumes will increase after the soil is excavated and left in an unconsolidated state prior to loading and off-site disposal.

A work assignment responsibility chart (Table 3-1) identifies the responsibilities that the Contractor, NSA Crane, and Tetra Tech will have in the IMWP implementation.

#### **3.2 PERFORMANCE STANDARDS**

The following is a summary of the six excavation areas identified on Figure 3-1 and the associated performance standards for each excavation area. Excavation nodes are included on Figure 3-1, and the excavation node coordinates for the designated limits of excavation are listed in Table 3-2. Performance standards for the IMWP are presented in the following sections.

##### **Soil Excavation/Removal**

Soil in the three PAH-contaminated soil areas (PAH Excavation Areas 1, 2, and 3) and the soil in the three elevated soil-lead areas (Lead Excavation Areas 1, 2, and 3) will be excavated independently. There is some minor excavation area overlap between the northernmost PAH area (PAH Excavation Area 1) and the westernmost lead area (Lead Excavation Area 1). The maximum lead detection in Lead Excavation Area 1 (soil collected from the headwall discharge point) is below 700 ppm lead. The Environmental Multiple Award Contract (EMAC) contractor will be responsible for collecting soil samples,

as necessary, to characterize soil for treatment, storage, and offsite disposal. Unless otherwise stated for specific excavation areas, direct loading of the trucks from the excavation is the preferred approach. When there is a need for stabilization or treatment of lead in soil, the contractor may elect to create a treatment pile to support that process, in accordance with the requirements of their NAVFAC-approved work plan (described Appendix C),

The soil-lead concentrations upslope and behind the concrete headwall in Lead Excavation Area 1 in the overlap area are known to be less than 200 ppm lead; therefore, the overlap soil may be managed as soil containing elevated PAH concentrations (as BaP equivalents) with the excavated materials from PAH Excavation Area 1, without a significant concern for the soil being considered hazardous because of lead contamination (Figure 3-1). The remaining soil in the Lead Excavation Area 1 (that is not part of the PAH Excavation Area 1) will be excavated and managed to address the lead contamination, and the EMAC contractor will characterize that soil to verify selection of an appropriate trucking company and an off-site disposal facility (hazardous versus non-hazardous).

### **PAH Excavation Areas**

The three excavation areas planned to address elevated soil PAH concentrations at SWMU 23 collectively cover approximately 0.14 acres (5,898 square feet). The approximate soil volumes to be excavated to address excess soil PAH risks at SWMU 23 were determined by multiplying the total excavation area of all three PAH-contaminated soil areas [as estimated by the geographic information systems (GIS) data], by the average required depth of excavation for each area in feet (the vertical soil removal limit for each area). The soil depths designated for excavation to address excess soil PAH risks at SWMU 23 in the three areas, as shown on Figure 3-1, range from two to four feet below ground surface (or to top of bedrock, whichever is encountered first). The estimated total soil volume targeted for excavation, removal, and off-site disposal from the three PAH areas (Figure 3-1) is approximately 574 cubic yards (cy) (Table 3-3).

The SWMU 23 IMWP for the three PAH excavation areas consists of the following major soil excavation components as shown in Figure 3-1:

- **PAH Excavation Area 1.** The area of soil to be removed from PAH Excavation Area 1 covers approximately 1,849 square feet (Figure 3-1). This discrete soil area is designated for excavation down to a depth of 4 feet (or to the top of bedrock, whichever is encountered first) to address the “hot spot” BaP equivalent concentrations of 2.19 mg/kg (surface to two feet bgs) and 20.796 mg/kg (two to four feet bgs) at location 23SB004. The deeper (four to six feet beg) soil sample had a BaP

equivalent concentration of less than 0.15 mg/kg. The estimated volume of PAH-contaminated soil to be removed is 274 cy, which will weigh an estimated 448 tons, as presented in Table 3-3.

- **PAH Excavation Area 2.** The area of soil to be removed from PAH Excavation Area 2 covers approximately 1,684 square feet (Figure 3-1). This discrete soil area is designated for excavation down to a depth of 2 feet to address two “hot spot” BaP equivalents concentrations: 4.6 mg/kg at sample location 23SB003, and 3.65 mg/kg at sample location 23SB071. The estimated volume of PAH-contaminated soil to be removed is 125 cy, which will weigh an estimated 204 tons, as presented in Table 3-3.
- **PAH Excavation Area 3.** The area of soil to be removed from PAH Excavation Area 3 covers approximately 2,365 square feet (Figure 3-1). This discrete soil area is designated for excavation down to a depth of 2 feet below ground surface to address three “hot spot” BaP equivalents concentrations: 3.82 mg/kg at sample location 23SB002, 6.8 mg/kg at sample location 23SB065, and 30.9 mg/kg at sample location 23SB068. The estimated volume of PAH-contaminated soil to be removed is 175 cy, which will weigh an estimated 287 tons, as presented in Table 3-3.

### **Lead Excavation Areas**

The three primary excavation areas planned to address elevated soil lead concentrations at SWMU 23 cover approximately 0.16 acres (6,939 square feet) (Figure 3-1). The approximate soil volumes to be excavated were determined by multiplying the total excavation area of all lead-contaminated soil (as estimated by GIS data), by the average required depth of excavation for each area in feet. The EMAC contractor will be responsible for proper management of the lead-contaminated soil from each of the three areas. If the lead-contaminated soils are carefully excavated and segregated, then the EMAC contractor could manage, transport, and dispose a portion of the soils with lower lead concentrations as non-hazardous waste; and higher concentration lead-contaminated soil could be managed, transported and disposed as hazardous waste. The EMAC contractor could choose to stabilize the soil while still onsite and prior to transportation, so that the stabilized soil would pass the toxicity characteristic leaching procedure (TCLP) test for lead and be managed as non-hazardous waste.

The typical depth of lead-contaminated soil designated for excavation in the three primary excavation areas, as shown on Figure 3-1, is approximately 2 feet. However, deeper soil lead contamination was observed in samples collected from boring location 23SB085, so Lead Excavation Area 2 was further subdivided into Subarea 2A (on the west) and Subarea 2B (on the east). The lead contamination in Lead Excavation Subarea 2B appears to be confined to the top two feet of soil. The proposed excavation

depth for Lead Excavation Subarea 2A is six feet, with a need for soil confirmation sampling on the excavation floor to verify that the soil at the base of the excavation meets the residential MCS for lead (400 mg/kg). The estimated total soil volume targeted for excavation, removal, and off-site disposal from the three lead areas (Lead Excavation Areas 1, 2, and 3) is approximately 983 cy (Table 3-3).

The SWMU 23 IMWP for the three lead excavation areas consists of the following major soil excavation components to excavate and remove detected soil lead concentrations greater than 400 mg/kg in the surface soil, as shown in Figure 3-1:

- **Lead Excavation Area 1.** The area of soil to be removed from Lead Excavation Area 1 covers approximately 208 square feet (Figure 3-1). This discrete soil area is designated for excavation of the soil down to a depth of 2 feet to address one “hot spot” soil lead concentration of 691 mg/kg at sample location 23SB010. This soil lead hot spot is also located on the excavation perimeter for PAH Excavation Area 1; therefore, only the portion of Lead Excavation Area 1 outside the footprint of PAH Excavation Area 1 will be excavated to address excess lead risk. The estimated volume of lead-contaminated soil to be removed is 15 cy, which will weigh an estimated 25 tons, as presented in Table 3-3.
- **Lead Excavation Subarea 2A.** The area of soil to be removed from Lead Excavation Subarea 2A covers approximately 3,169 square feet (Figure 3-1). This discrete soil subarea is designated for excavation down to an average depth of 6 feet to address four identified “hot spot” soil lead concentrations: 4,640 mg/kg at sample location 23SB014, 1,000 mg/kg at sample location 23SB043, 700 mg/kg at sample location 23SB044, and a series of elevated soil lead detections at 23SB085 that ranged from 490 mg/kg (2-4 feet bgs) to 910mg/kg (surface to 2 feet bgs). The sample collected at 23SB085 from 4 to 6 feet bgs was also contaminated with 690 mg/kg soil lead. Confirmation soil lead sampling is recommended for the floor of Subarea 2A to confirm adequate risk reduction has been accomplished. The estimated volume of lead-contaminated soil to be removed is 704 cy, which will weigh an estimated 1,136 tons, as presented in Table 3-3.
- **Lead Excavation Subarea 2B.** The area of soil to be removed from Lead Excavation Subarea 2B covers approximately 2,972 square feet (Figure 3-1). This discrete soil subarea is designated for excavation down to a depth of 2 feet to address three identified “hot spot” soil lead concentrations in surface soil: 710 mg/kg at sample location 23SB041, 430 mg/kg at sample location 23SB084, and 4,800 mg/kg at sample location 23SB087. The estimated volume of lead-contaminated soil to be removed is 220 cy, which will weigh an estimated 355 tons, as presented in Table 3-3.

- **Lead Excavation Area 3.** The area of soil to be removed from Lead Excavation Area 3 covers approximately 590 square feet (Figure 3-1). This discrete soil area is designated for excavation of the soil down to a depth of 2 feet to address a single identified “hot spot” soil lead concentration of 1,920 mg/kg at sample location 23SB017. The estimated volume of lead-contaminated soil to be removed is 44 cy, which will weigh an estimated 71 tons, as presented in Table 3-3.

**SWMU 23 - SOIL EXCAVATION / REMOVAL SUMMARY**

<b>Soil Excavation Area</b>	<b>Proposed Excavation Depth (feet bgs)</b>	<b>Approximate Soil Volume (cy)</b>	<b>Approximate Soil Mass (tons)</b>
PAH Excavation Area 1	4	274	448
PAH Excavation Area 2	2	125	204
PAH Excavation Area 3	2	175	287
Lead Excavation Area 1	2	15	25
Lead Excavation Area 2A	6	704	1,136
Lead Excavation Area 2B	2	220	355
Lead Excavation Area 3	2	44	71

See Table 3-3 for more detailed information

In the event that the Contractor spills excavated soil on an uncontaminated area, the Contractor will be responsible for removing the contaminated soil along with any impacted surface soil, verifying that all contaminated materials have been removed, and disposing of that material at their own expense.

The Contractor should describe the process for transporting excavated soil in the Contractor’s Work Plan (see Appendix C).

### **Soil Erosion Control**

Soil that accumulates in E&S control devices (see Section 4.0) prior to backfilling of the excavations will be disposed off-site along with the contaminated soil. Following backfilling of the excavation, soil that accumulates in the E&S control devices will be spread across the disturbed ground surface of the excavation.

### **Dewatering**

The EMAC Contractor will make every effort to prevent the need to dewater excavated soil, and to prevent the accumulation of water within excavations. Open excavations will be kept to a minimum. To avoid the generation of contaminated water inside active excavations, the contractor should not excavate during heavy rain events, and should design their soil excavations to minimize the collection of

precipitation inside excavated areas. It is anticipated that the only material that will require dewatering might be soil that is excavated soon after a heavy precipitation event (a precipitation event that results in the addition of excess water volume [and weight] to the soil and will require that the excavated soil be dewatered prior to transportation for off-site disposal). Otherwise, there is no anticipated need for soil dewatering. When necessary, the excavated soil will be placed on a dewatering pad at a lift thickness no greater than three feet, and allowed to drain by gravity to be collected within the dewatering pad. Following dewatering, the Contractor will collect the required disposal characterization samples, and will mix the soil to promote additional dewatering. It is estimated that following the second day of dewatering, the moisture content of the soil will have been sufficiently reduced and the material will not require the addition of an absorbent agent in order to be made suitable for transportation and disposal. At the conclusion of the field effort, if there is accumulated water at the dewatering pad, then the water will be sampled for characterization to ensure proper management for off-site disposal.

### **Sampling and Analysis**

At the completion of this IM and following removal of the support facilities (e.g., dewatering pad, decontamination pad, and material storage area, etc.), support area verification samples will be collected by Tetra Tech from the surface soil below the decontamination pad, material storage area, and dewatering pad (if these items are installed). If it is determined that the lining system under any of the support facilities failed during implementation of this IM, potentially resulting in the contamination of the soil below the support facilities, the Contractor will be required to remove that contamination at their own expense. The EMAC has the option of pre-installation sampling of surface soils.

### **Disposal**

Soil designated for excavation will be sampled by the Contractor for waste disposal characterization purposes in accordance with the waste disposal facility requirements, using the methods required by the NAVFAC-approved waste disposal facility. The Contractor is responsible for satisfying all disposal requirements of the selected disposal facility. Table 3-3 presents the quantities of soil to be excavated from each area.

The Contractor will be responsible for verifying the classification of off-site disposal material (e.g., disposal as non-hazardous material) by conducting characterization sampling and analysis, and satisfying the waste disposal facility requirements.

## **Backfilling**

Immediately following excavation of an individual area of contaminated soil, the excavated area will be backfilled, compacted, and regraded to the level of surrounding grades (Figure 1-2). An exception to the immediate backfilling procedure will be Lead Area 2A which requires confirmation sampling. The excavation for Lead Area 2A should be managed to permit it to remain open for up to five days as the laboratory analyzes the confirmation samples. This could be done via the use of a large single piece of liner (e. g., visqueen) or multiple pieces of liner (e. g., biodegradable filter fabric) covered with clean fill (the purpose of the liner material to differentiate between clean fill and unexcavated material, as well as to protect the clean fill from contamination in the event additional excavation is required).

Backfill materials will need to be placed with clean or decontaminated equipment. Surface and subsurface soil excavation and impacted areas in level areas will be backfilled to approximate pre-construction conditions using continuous backfilling techniques. There will be no backfill placement required on steep hillside areas with slopes greater than 3:1. The backfill materials obtained from an off-site borrow source will have properties similar to the native SWMU 23 surface/subsurface soil. This soil will be subject to analytical testing by the Contractor to ensure that the material satisfies the following requirements:

- TAL Metals
- Pesticides and Herbicides
- SVOCs
- Sum of benzene, toluene, ethylbenzene, and xylenes, USEPA SW-846 5030 / 8021 - less than 1 ppm.
- Total PCB, USEPA SW-846 8082 - less than 1 ppm.

Additionally, the backfill material shall meet the physical characteristics described below for each of the six primary excavation areas. The backfilled areas will be restored to pre-construction conditions using permanent stabilization practices by covering them with gravel, and (where appropriate) vegetation featuring a variety of habitat enhancement plant species.

### Surface/Subsurface Soil Excavation Backfill (to within 9-inches below the ground surface elevation) –

Backfill soil for the surface/subsurface soil excavation area will be placed in 1-foot thick lifts, and compacted by track-walking across the backfilled area with track-type equipment. As previously noted, the removal of thin soil horizons from more highly sloped areas will not be restored by backfilling and consequently those same high-slope areas will not be compacted by track-walking.

Surface/Subsurface Soil Excavation Topsoil/Gravel (top 9-inches) – The existing surface in the surface/subsurface soil excavation area is covered with either gravel or grass. The top 9 inches of backfill in gravel areas will be American Association of State Highway and Transportation Officials (AASHTO) No. 7 stone compacted using a smooth drum roller or equivalent. The top 9 inches of backfill in vegetated areas will be uncompacted topsoil.

### **Restoration**

The disturbed areas backfilled and regraded as part of the IMWP implementation will be restored and stabilized using permanent stabilization practices. As previously stated, there will be no backfill placement and no restoration required for steep hillside areas with slopes greater than 3:1. Restoration will consist of surface preparation, fertilizing, seeding, and mulching, where appropriate. Seeding procedures and procedures for associated activities (fertilizing and mulching) are presented in detail in Section 4.4. The following paragraphs describe the restoration activities that will take place for various areas/activities.

Surface/Subsurface Soil Excavation Area Restoration – Restoration includes the preparation of gravel and vegetation surfaces. The Contractor will identify the areas that require gravel and vegetation surfaces prior to excavation.

### **Erosion and Sediment Control**

Before excavation activities begin, E&S controls will be established to prevent impacts to surface water downgradient of the disturbance areas, namely Lake Greenwood (see Section 4.0). During excavation, backfilling, and restoration operations and until stabilization is achieved (either through placement of biodegradable erosion control matting or vegetation establishment), the E&S controls will be regularly inspected and maintained. To prevent contact with soil in excavation areas and to control the potential for accumulation of precipitation in excavation areas, tarps or plastic sheeting will be employed as temporary barriers (secured with clean fill) to keep contaminated soil from becoming saturated in the excavations. E&S control requirements to be complied with during IMWP implementation include the Indiana Storm Water Quality Manual (IDEM, 2007).

### **Decontamination Pad**

Temporary decontamination pad(s) will be set up to clean the equipment used to excavate and transport contaminated soil at various locations. The pads will be sized to accommodate all the equipment to be



used at the site, and will be constructed in a manner that contains all the contaminated material removed from equipment and the liquids used to clean the equipment. Contaminated material removed from the equipment will be disposed off-site with the excavated soil. Water from the temporary decontamination pad will be collected for off-site disposal by the EMAC contractor. Additional decontamination pad requirements are discussed in Section 4.5. Care will be taken to keep off-road transport equipment clean to minimize the spread of contaminated soil to areas adjacent to the excavations or other areas within SWMU 23. Any soil removal from these areas, and any associated disposal and restoration costs will be the responsibility of the Contractor.

### **Dewatering Pad**

If required, a temporary dewatering pad will be set up to dewater excavated soil that is exposed to heavy precipitation events. Although the need to dewater any excavated soil is not anticipated, should excavated soil require dewatering prior to off-site disposal, wet soil will be stockpiled on a dewatering pad which will be located within the construction area. The dewatering pads will be sized to accommodate excavated soil and loading equipment, as necessary. The dewatering pad will be constructed in such a manner that will retain all materials while allowing the water to drain by gravity from the soil and be collected in a sump. The water will then be filtered to remove any remaining soil. After the water is filtered, it will be sampled for characterization and staged for eventual off-site disposal. In addition, the dewatering pad will be constructed to allow for the loading of dewatered soil material into trucks for transport to the NSA Crane-approved off-site disposal facility.

The volume of water collected through dewatering is not expected to be large, unless soil excavation/removal is performed during periods of heavy precipitation. The EMAC contractor will make every effort to prevent or minimize the excavation of soil requiring dewatering. Excavation activities will cease during heavy rain events, and excavations will be covered with tarps or plastic sheeting (as temporary barriers and anchored with clean fill) to keep contaminated soil from becoming saturated in the excavations. If the EMAC contractor fails to show due diligence to prevent or reduce the accumulation of excess water, then the cost of the management and disposal of the water will be borne by the EMAC contractor. Additional dewatering pad requirements are discussed in Section 4.5.

### **Clearing**

Although extensive vegetation clearing is not anticipated, it is anticipated that there will be a need for limited brush and tree vegetation clearing to support access of earthmoving equipment and field personnel to the three PAH Soil Excavation Areas and the three Lead Excavation Areas. Vegetation

clearing will be kept to a minimum to minimize impacts to natural habitat, and in accordance with the woody vegetation removal limitations described in Section 3.5.2. Cleared vegetation will be chipped, and disposal will be at the direction of the Officer in Charge of Construction (OICC). Standing trees will not be removed from April 1 through September 30 to comply with Indiana bat regulations, as addressed in Section 3.5.2.

### **3.3 SEQUENCE OF IMWP IMPLEMENTATION**

The generalized sequence of construction activities is presented below. This sequence of construction is subject to change based on the Contractor's Work Plan and the Navy's selected construction approach.

1. Hold a pre-IMWP implementation meeting with the NSA Crane OICC, Contracting Officer, IM Contractor, and Tetra Tech representative, at a minimum.
2. Inspect and photograph SWMU 23 to verify existing site conditions, confirm all utility locations, and obtain all required permits.
3. Install perimeter controls per the Erosion and Sediment Control Plan (Section 4.0). Maintain all perimeter controls during excavation and restoration activities.
4. Clear areas for support features including, but not limited to, the decontamination pad, materials storage area, and potential dewatering pad. Construct the support features as needed in work areas.
5. Excavate PAH-contaminated soil areas from SWMU 23. Continuous backfill shall be employed during soil excavation as much as is practical to reduce the amount of open excavations. Load and transport soil to the NSA Crane-approved off-site disposal facility. Following the excavation and removal of PAH-contaminated soil, restore the disturbed areas as required.
6. Excavate the lead-contaminated soil areas from SWMU 23. The contractor may elect to stabilize lead-contaminated soils that fail the TCLP test, because without stabilization those soils would require management, transport, and disposal as hazardous waste. The lead-contaminated soil will be loaded for off-site disposal. Load and transport soil to the NSA Crane-approved off-site disposal facility. Following the excavation and removal of lead-contaminated soil, restore the disturbed areas as required

7. Employ continuous backfill during soil excavation as much as is practical to reduce the amount of open excavations.
8. Following the excavation and removal of lead-contaminated soil, restore the disturbed areas as required.
9. Following transportation and disposal of all excavated surface/subsurface soil, remove the dewatering pad (if necessary), decontamination pad, and materials storage area. Tetra Tech will collect verification samples from within the footprint of the support features. All costs associated with remediation of any contamination found in the support areas will be borne by the EMAC contractor. Following verification that the ground beneath these support features was not impacted by construction activities, regrade as necessary and establish permanent stabilization.
10. Following permanent stabilization of all disturbed areas, and with the approval of the OICC, remove all remaining perimeter controls, and immediately stabilize all remaining disturbed areas.

### **3.4 STORMWATER POLLUTION PREVENTION**

The SWMU 23 ground surface hydrology, grading, and cover will not be altered from IMWP implementation activities. Pre- and post-development runoff from the limits of disturbance will be the same; therefore, additional stormwater detention capacity is not required.

If the total disturbed area for construction of the dewatering pad (if necessary), decontamination pad, materials storage areas, soil removal areas, etc. is less than 1.0 acre, then the preparation of an IDEM Storm Water General Permit will not be required for this activity. As currently envisioned, it is unlikely that an IDEM Storm Water General Permit would be needed for this interim measures activity because the disturbed area will be less than 1 acre. However, since the disturbed soil removal areas sum to approximately 0.30 acres, if the area to be disturbed during the construction of the dewatering pad (if necessary), decontamination pad, materials storage areas, etc., is greater than 0.70 acres, then the EMAC contractor will be required to prepare an IDEM Storm Water General Permit for this activity. Should the EMAC contractor choose to construct haul roads to access downslope areas excavation areas, then the total area disturbed to construct the haul roads should be included in the calculation of the total area of disturbance. Additionally, IMWP implementation activities require the use of best management practices for E&S control and stormwater pollution prevention as described in Section 4.0.

### **3.5 OTHER IMWP IMPLEMENTATION REQUIREMENTS**

#### **3.5.1 Utilities**

The Contractor is required to verify all utility locations and adequately protect any utilities located in the active work areas before any earth-disturbing activities begin. Potable water for project personnel and equipment decontamination will be available at B-3245.

#### **3.5.2 Protection of Natural Resources**

Threatened and endangered species or species of special concern protected under Indiana or federal regulations exist or may exist at SWMU 23, and will be protected. Protected bird species that may use SWMU 23 as part of their home range include the bald eagle, osprey, sharp-shinned hawk, red-shouldered hawk, broad-winged hawk, black and white warbler, hooded warbler, and the worm-eating warbler (B&RE, 1997). Also, the Indiana bat, a federally endangered species, is known to forage at NSA Crane. During the spring and summer, Indiana bats roost in trees and forage for insects primarily in riparian and upland forests. The most important characteristic of roost trees is thought to be structural-exfoliating bark with space for bats to roost between the bark and the bole of the tree. To a limited extent, tree cavities and crevices are also used for roosting. Although extensive tree removal is not anticipated, there may be some limited vegetation removal required to access the northernmost and westernmost soil removal areas to address lead and PAH contamination, respectively. When vegetation removals are necessary, the Contractor will comply with the requirements presented here.

In 1997, NSA Crane received a letter from the United States Fish and Wildlife Services (USFWS) stating that, in their opinion, NSA Crane had an abundance of Indiana bat habitat, and that any activity that would result in the clearing of woody vegetation may affect the Indiana bat and would require consultation under the Endangered Species Act (ESA). The USFWS recommended interim guidelines for protecting Indiana bats and their habitat from silvicultural activities, and these recommendations were immediately implemented by NSA Crane under the timber management program.

Because of the Indiana bat and its potential habitat, the cutting of trees at NSA Crane is restricted to certain times during the year. A summary of Indiana bat-related restrictions prepared by the NSA Crane Natural Resources Office (i.e., "bat primer") is as follows:

- Consult with the NAVFAC Crane Natural Resources Office prior to any tree removal.
- Woody vegetation that is 5 inches in diameter or greater at 4.5 feet above the ground surface may not be removed from April 1 through September 30.
- Standing dead trees may not be removed from April 1 through September 30.
- Timber harvesting may occur after September 30 and before April 1 without a case-by-case consultation, provided the interim guidelines for silvicultural treatment issued to the NAVFAC Crane Natural Resources Office by the USFWS are followed.
- During emergency situations, necessary and prudent tree removal is allowed at all times without consultation. However, the contractor will still need to seek the approval of the NAVFAC Crane Natural Resources Office.
- Brush clearing of woody vegetation less than 3 inches in diameter at 4.5 feet above the ground may occur at any time of the year without consultation.
- All other tree removal or clearing projects not covered above must be submitted to the USFWS for informal consultation on a case-by-case basis.

### **3.5.3      Traffic Control Plan**

Access to NSA Crane is via four gates: the Main Gate referred to as the Bloomington Gate (Gate House No. 1) in the north, Burns City Gate (Gate House No. 2) in the west, Bedford Gate (Gate House No. 3) in the east, and Crane Gate (Gate House No. 4) in the northwest. NSA Crane will be accessed by the Contractor only through the Crane Gate. All vehicles will pass through the Crane Gate via the traffic routing plan shown on Figure 3-2. The Contractor is not permitted to travel within restricted areas of the facility. All waste hauling vehicles will be weighed upon arrival and at time of departure using the certified weight scale located at the Defense Reutilization and Marketing Office (DRMO) (Building 2943). The DRMO scale is operated during normal business hours, and weight tickets are available. All waste hauling trucks shall record both empty (tare) and loaded (gross) weights for each trip.

#### **3.5.4 Contractor Requirements**

The Contractor will be required to perform all IMWP implementation activities in accordance with the Contractor's Basic Contract, NSA Crane Contractor's Operations Manual (NSWC Crane, 2002), and supplemental specifications provided in Appendix C.

The IWMP will be implemented by the Contractor, NSA Crane, and Tetra Tech, with work assignments summarized in Table 3-1.

### **3.6 IMPLEMENTATION**

The Contractor will coordinate all field work through the OICC.

IMWP implementation may be impacted by NSA Crane activities and the facility's "Protective Measures." NSA Crane will implement a corresponding set of "Protective Measures" based on the warnings provided by the Homeland Security Advisory System in the form of graduated "Threat Conditions." The Contractor will be subject to any implemented "Protective Measures."

The Navy will provide a full-time oversight representative during IMWP implementation.

TABLE 3-1

**WORK ASSIGNMENT RESPONSIBILITY CHART  
INTERIM MEASURES WORK PLAN  
SWMU 23 – BATTERY SHOP BUILDING 36  
NSA CRANE  
CRANE, INDIANA**

WORK ITEM	CONTRACTOR	NSA CRANE	Tetra Tech
Pre-IMWP Implementation Meeting	X	X	X
Interim Measure Implementation	X		
Contractor Work Plan <sup>(1)</sup>	X		
Site Specific Health and Safety Plan / Activity Hazard Analysis	X		
Project Quality Control Plan	X		
Surveying and marking of excavation nodes			X
Environmental Conditions Report	<sup>(2)</sup>		X
Permits			
- Safety & Building Availability Permit (ESO 8020/11)	X		
- Digging Permit (NWSCC 11000/3)	X <sup>(3)</sup>		
- Flame Tool / Hot Work Permit (NWSCC 11320)	X		
- IDEM Storm Water General Permit	X		
Field Work Reports and Submittals <sup>(4)</sup>	X		
Sampling and Analysis	X <sup>(5)</sup>		X <sup>(6)</sup>
Wastewater Disposal (Decontamination Water)	X		
CTO Closure Report	X <sup>(7)</sup>		X

## NOTES:

- Contractor Work Plan includes, but is not limited to, an excavation and handling plan, waste management plan, environmental protection plan, erosion and sediment control plan, stormwater pollution prevention plan, sampling plan, and transportation and disposal plan.
- Contractor will participate in documenting environmental conditions before, during, and after implementation of the interim measures.
- Contractor completes the permit form.
- Contractor will furnish items identified in the Basic Contract, NSA Crane Contractor's Operations Manual, and the Supplemental Specifications provided in Appendix C.
- Contractor will be responsible for the collection of characterization samples required for off-site disposal of excavated surface soils. Contractor will be responsible for collection, storage, characterization, and discharge of wastewater to the NSA Crane approved stabilized drainage channel, storm drain, or wastewater treatment plant. Contractor will be required to characterize backfill materials.
- Tetra Tech will be responsible for collection and analysis of soils beneath equipment laydown areas and project support areas after completion of excavations.
- Contractor will furnish items identified in the Supplemental Specifications provided in Appendix C.

CTO - Contract Task Order

IMWP - Interim Measures Work Plan

NSA - Naval Support Activity

Tetra Tech - Tetra Tech, Inc.

X – Indicates responsible party

NWSCC - Naval Weapons Support Center Crane

ESO - Explosives Safety Office

IDEM - Indiana Department of Environmental Management

TABLE 3-2

**EXCAVATION NODES FOR SWMU 23 INTERIM MEASURES  
NSA CRANE  
CRANE, INDIANA**

Subarea Name	Excavation Node Point Label	Northing	Easting
PAH 1 (Northern)	23SB010	1318842.88	3025355.23
	23SB048	1318836.60	3025390.52
	23SB074	1318811.92	3025380.00
	23SB053	1318780.09	3025337.17
	23SB049	1318829.21	3025348.17
PAH 2 (Central)	23SB059	1318710.14	3025290.40
	23SB073	1318750.63	3025327.79
	23SB072	1318711.71	3025346.21
	23SB062	1318676.73	3025304.16
PAH 3 (Southern)	23SB001	1318534.96	3025358.58
	23SB066	1318600.89	3025321.45
	23SB064	1318632.33	3025315.95
	23SB069	1318603.25	3025369.00
Lead 1 (Western)	23SB010	1318842.88	3025355.23
	23SB049	1318829.21	3025348.17
	23SB079	1318843.39	3025345.45
	23SB078	1318851.72	3025350.14
	23SB077	1318851.72	3025360.04
	23SB076	1318846.51	3025364.20
Lead 2A / 2B (Central)	23SB016	1318880.19	3025528.57
	23SB042	1318861.01	3025538.03
	23SB015	1318848.85	3025592.99
	23SB092	1318790.42	3025550.77
	23SB088	1318810.62	3025515.17
	23SB089	1318805.53	3025472.94
	23SB045	1318861.63	3025480.44
Lead 3 (Northeastern)	23SB039	1318902.19	3025568.99
	23SB040	1318876.80	3025578.59
	23SB046	1318877.42	3025547.01
	23SB047	1318899.09	3025550.72

(see Figure 3-1 for the mapped locations of these excavation nodes).



TABLE 3-3

**SUMMARY OF SWMU 23 SOIL EXCAVATIONS TO ADDRESS LEAD AND PAH CONTAMINATION WITH EXCESS RISK  
NSA CRANE, INDIANA**

Excavation Type	Area ID	Excavation Area - Square Feet	Proposed Depth for Soil Excavation (Feet)*	Volume of Soil Proposed for Removal (Cubic Feet)	Volume of Soil Proposed for Removal (Cubic Yards)	Average Density of Soil Proposed for Removal (Lbs./Cubic Ft.)	Average Density of Soil Proposed for Removal (tons/cubic yard)	Mass of Soil Proposed for Removal (Pounds)	Mass of Soil Proposed for Removal (tons)
PAH	Excavation Area 1	1849	4	7395	274	121.21	1.64	896358	448.2
PAH	Excavation Area 2	1684	2	3369	125	121.21	1.64	408308	204.2
PAH	Excavation Area 3	2365	2	4730	175	121.21	1.64	573352	286.7
	<b>Summed PAH Areas =</b>	5898		<b>Total Cubic Yards =</b>	574				
					<b>Total Tons of PAH (as BaP Equivalents)-Contaminated Soil =</b>				939
Lead	Excavation Area 1	208	2	415	15	119.45	1.61	49579	24.8
Lead	Excavation Area 2A (west)	3169	6	19014	704	119.45	1.61	2271222	1135.6
Lead	Excavation Area 2B (east)	2972	2	5944	220	119.45	1.61	710011	355.0
Lead	Excavation Area 3	590	2	1180	44	119.45	1.61	140973	70.5
	<b>Summed Lead Areas =</b>	6939		<b>Total Cubic Yards =</b>	983				
					<b>Total Tons of Lead-Contaminated Soil =</b>				1586
					<b>Total Tons of Soil to be Excavated =</b>				<b>2525</b>

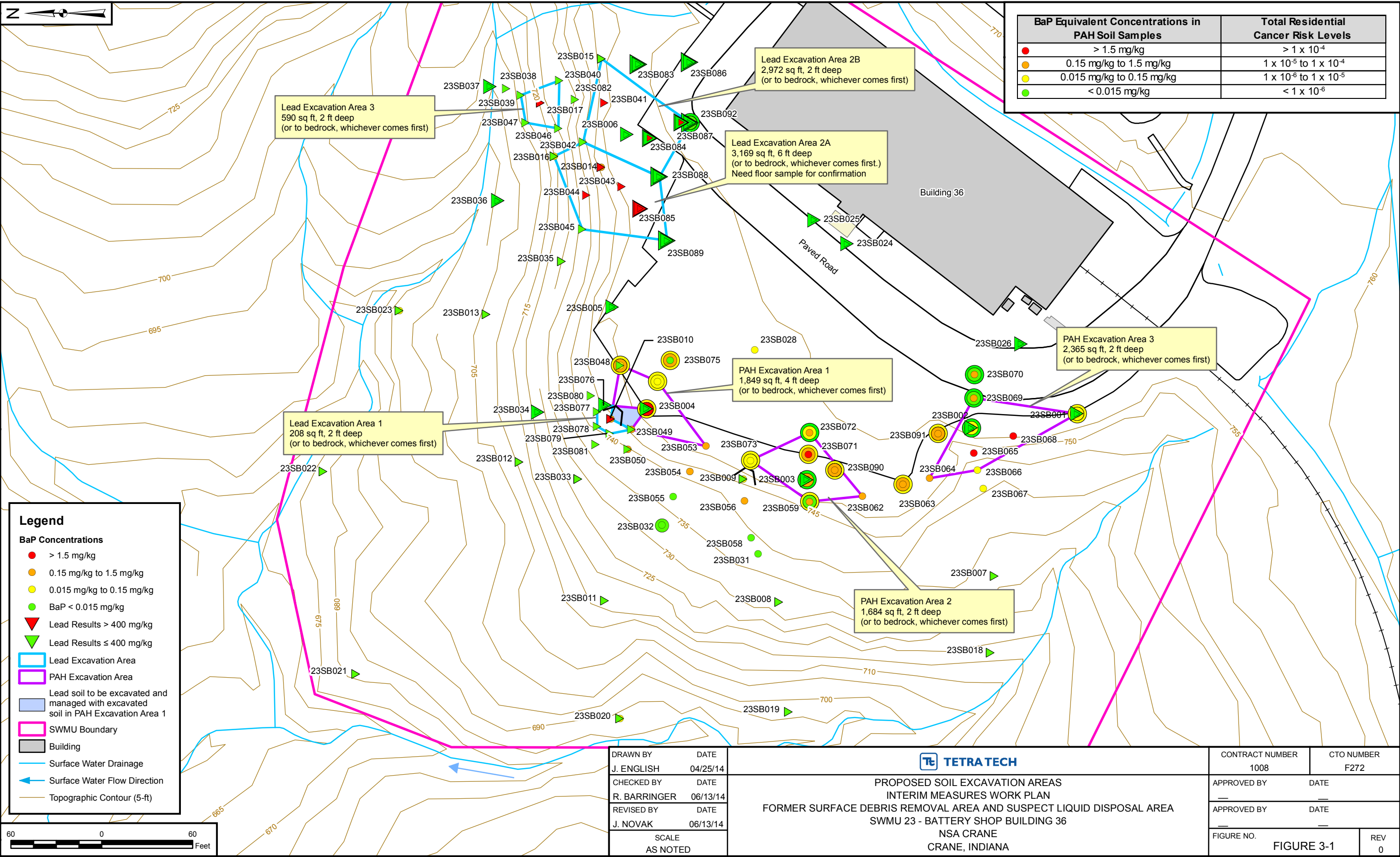
## Note:

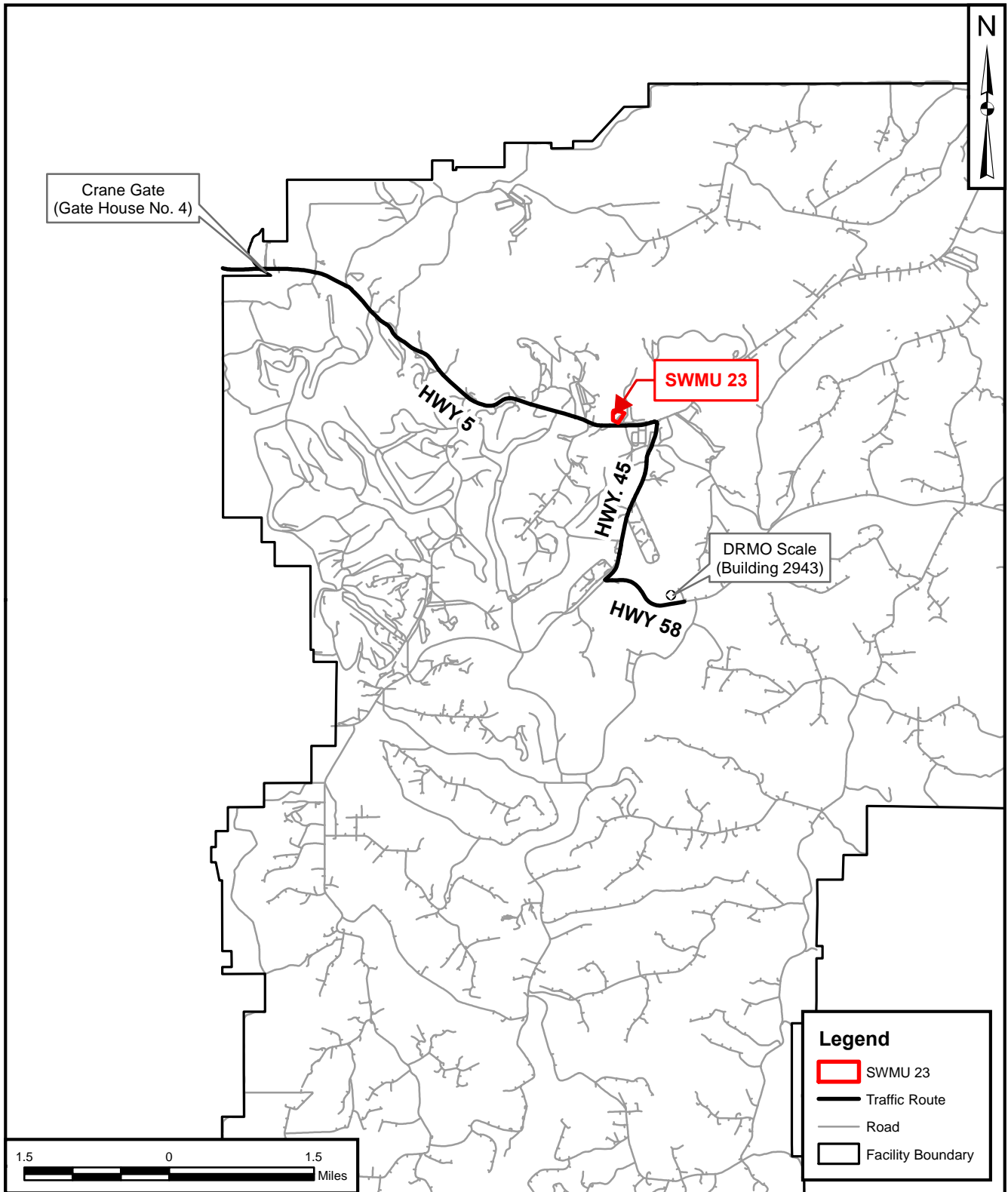
Soil densities are from the soil sample collected at location 23SB072 and reflect the shallower averaged soil densities for lead and the total averaged soil densities for PAHs.

\* Proposed excavation depth based on confirmed contamination depth, but some areas of shallow bedrock may prevent complete excavation to this depth.

Within designated excavation areas the proposed excavation depth from ground surface will be achieved unless the top of berock is encountered first.

For specific areas, post-excavation soil confirmation sampling may be required to verify sufficient contaminated soil volumes were removed to reduce exposure risks.





DRAWN BY	DATE
J. ENGLISH	04/30/14
CHECKED BY	DATE
R. BARRINGER	06/25/14
REVISED BY	DATE
S. PAXTON	06/25/14
SCALE AS NOTED	



TRAFFIC CONTROL PLAN  
SWMU 23 - BATTERY SHOP BUILDING 36  
NSA CRANE  
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
1008	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO.	REV
3-2	0

## **4.0 EROSION AND SEDIMENT CONTROL PLAN**

### **4.1 PURPOSE**

The purpose of this section is to describe the steps that will be taken to minimize and/or eliminate erosion and sedimentation during the implementation of the IMWP at SWMU 23. The E&S control plan has been developed in accordance with the guidelines defined in the Indiana Storm Water Quality Manual (Handbook) (IDEM, 2007). The E&S control devices described in this text can be modified based on construction equipment and techniques presented in the Contractor's Work Plan. Selected E&S control devices must be identified in the E&S Control Plan submitted with the Contractor Work Plan. After the E&S Control Plan is approved, no changes can be made without approval by the OICC.

The Contractor should note that this E&S Control Plan assumes that all elements of the SWMU 23 removal action will occur at one time. In the event the Navy elects to phase the construction activities at SWMU 23, all of the E&S Controls identified in this plan may or may not be required. The Contractor must identify the E&S Controls required for the construction activities identified in their work plan.

### **4.2 EROSION AND SEDIMENT CONTROL REQUIREMENTS**

E&S control measures are implemented to reduce or eliminate erosion and sedimentation of soil that would be detrimental to surface water quality. Surface drainage at SWMU 23 flows into drainage ditches and culverts that flow into unnamed intermittent streams that discharge to Lake Greenwood. A series of drainage ditches and culverts were constructed across SWMU 23 to promote local surface drainage and control surface flow. Overland flow follows topography and generally flows into the adjacent valleys that are north and west of Building 36.

The elevation of Lake Greenwood is approximately 580 feet amsl. The operational portion of SWMU 23 is located within a relatively flat area at the top of a steep slope that is bounded on the north and west by heavily wooded areas with steep hillsides. Surface elevations range from approximately 755 feet amsl in the area of Building 36, to approximately 675 feet amsl in the northwestern area of SWMU 23.

The drainage ditches that convey flow to Lake Greenwood are usually dry and are typically only wet during and immediately after rainfall. These perennial drainageways converge and flow to the north-northwest, eventually discharging to Lake Greenwood, located approximately 3,200 feet to the north.

IMWP implementation activities for SWMU 23 consist of excavating PAH-contaminated soil and lead-contaminated soil for disposal, backfilling excavations, and restoring disturbed areas. Surface and subsurface soil will be excavated from discrete areas located within SWMU 23.

Considering the type of IMWP activities and access issues, the proposed E&S control measures include the following:

- Silt Fence – Placed along the downslope sides of the surface soil excavation areas and the gravel construction entrances to provide a temporary sediment barrier. Silt fencing consists of synthetic filter fabric and wooden posts.
- Gravel Construction Entrances – Placed as a controlled site entrance to reduce the amount of sediment transported by construction vehicles onto facility and public roads.
- Dust Control – Utilized to prevent surface and air movement of dust from exposed soil surfaces, and to reduce the amount of airborne substances that may present health hazards, traffic safety problems, or harm plant/animal life.
- Biodegradable Features – Utilized to manage surface precipitation and surface flow through the strategic placement of straw bales, coconut fiber matting, or scattered straw to protect newly seeded areas. Erosion control wattles made from all natural fibers such as coconut coir or straw bales may be placed around storm drains or low flow channels to filter and control surface water runoff.
- Permanent Seeding – Utilized to establish perennial vegetation on disturbed areas by planting seeds of native grasses.

The construction, implementation, and maintenance of these E&S control devices will be in accordance with the Handbook. Figure 3-1 presents the proposed excavation areas. Figures 4-1 and 4-2 present typical details of the E&S control devices proposed for IMWP implementation (i.e., silt fence, gravel construction entrance, and in-stream sediment trap). Permanent seeding is discussed in Section 4.4. Dust control will be addressed in the Contractor's Work Plan. All E&S controls will remain in place until all upgradient areas have been stabilized. Stabilization will be determined by the OICC.

#### **4.3 INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS**

In general, all E&S control measures will be checked daily and after each runoff-producing rainfall event during the IMWP implementation activities. Any required repairs will be made immediately. The following items will be checked:

- The construction entrance will be maintained in a condition that will minimize tracking sediment onto facility or public roads.
- The silt fence will be checked for undermining or deterioration of the fabric. Sediment will be removed when the level of sediment causes bulging or reaches one-half of the fabric height.
- Seeded areas will be checked regularly to ensure that a good growth of vegetation is maintained and these areas will be fertilized and reseeded, as needed.
- The fuel and lubricant materials storage area will be checked to ensure that stored containers are not leaking and that any lining system or secondary containment system is functioning properly.

All E&S control devices will be inspected and maintained until the OICC has formally accepted the permanent stabilization of the disturbed areas. The Contractor will maintain a logbook of all E&S control device inspections and maintenance. This logbook will be available at the site at all times for inspection by duly authorized officials including NSA Crane personnel, NAVFAC MidLant and the IDEM.

#### **4.4 SITE RESTORATION**

All areas disturbed by IMWP implementation activities (excavation and support facility areas) will be restored and stabilized using soil, gravel, and permanent seeding. Activities to establish permanent stabilization will be implemented as soon as possible following the establishing of final grades. The establishment of permanent vegetation includes site/seed bed preparation, seeding, and mulching of the following locations:

- Surface soil below support facilities
- Surface soil excavation areas that extend beyond existing gravel paved areas

The procedures and requirements for permanent seeding activities are presented in Section 3.12 of the Handbook. The seed mixture recommended for use at SWMU 23 is a standard Indiana seed mixture for

open and disturbed areas. The seed mixture includes perennial ryegrass and tall fescue. Planting rates and optimum soil pH for this mixture are presented in Exhibit 3.12-C of the Handbook. Following seeding, the seeded areas will be covered with temporary erosion control matting (e.g., biodegradable materials such as coconut fiber matting, straw, etc.) to provide additional stabilization until vegetation is established. In the event that disturbed areas are brought to final grade outside of the optimal growing season for the permanent seed mixture, the disturbed areas will be temporarily stabilized using a temporary seed mixture. The procedures and requirements for establishing temporary stabilization are presented in Section 3.11 of the Handbook. As indicated in the Handbook, E&S control devices will remain in place until permanent stabilization is established over the disturbed areas. Therefore, E&S control devices will not be removed by the Contractor until directed by the OICC.

#### **4.5 RESPONSE PROCEDURES FOR SPILL MITIGATION**

Potential non-stormwater discharges anticipated during IMWP implementation activities include: dewatering liquids; wash water resulting from decontamination of field equipment and vehicles; fuel and lubricant spills from vehicle fueling, lubrication, and maintenance; and spills of fertilizers and small quantities of laboratory chemicals used in sample collection, and other flammable substances.

The water from the temporary decontamination pad will be collected for off-site disposal by the EMAC contractor. All vehicle fueling, lubrication, and maintenance will be performed utilizing drip pans to contain any spills that may occur or within the decontamination pad to contain spills. Containers of detergents and vehicle maintenance fluids (e.g., oil, grease, antifreeze, hydraulic fluid, etc.) will be stored within an enclosed, lined, diked area along with the equipment fuel, which will be stored in tanks. This area, referred to as the materials storage area, will be bermed and lined with a 60-mil low-density polyethylene (LDPE) geomembrane and will be sized to contain 110 percent of the volume stored within the area. A small sump, or low point in the liner, will be designed to serve as a collection and monitoring point for any leaks or spills from the containers stored within the materials storage area. When not in use, chemicals, paints, and other flammable substances will be stored in a flammable storage cabinet located within the Contractor's equipment trailer.

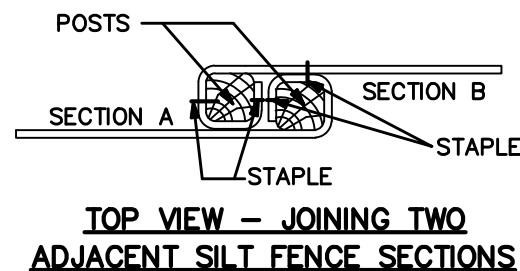
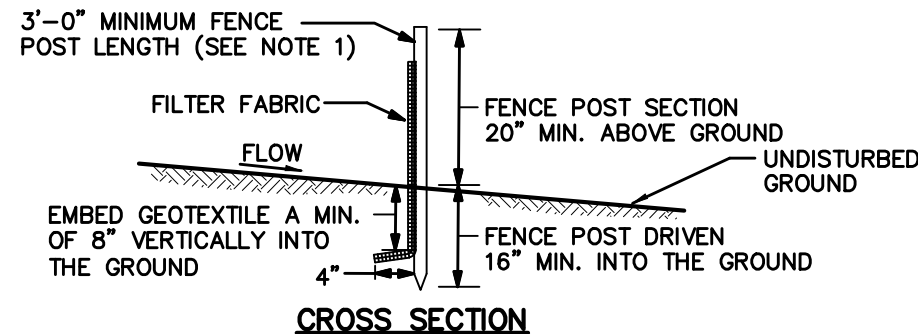
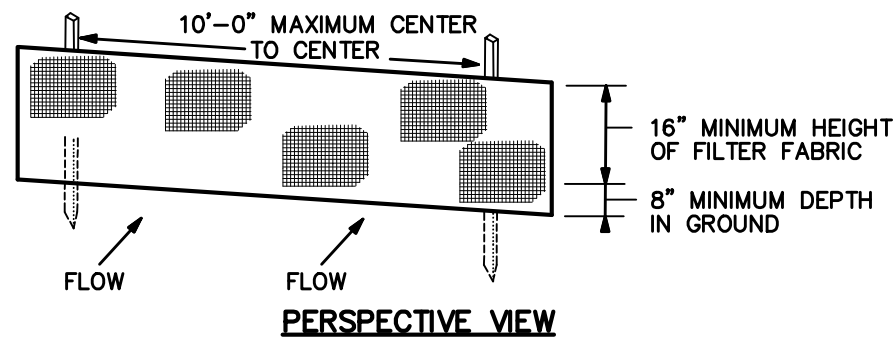
Good housekeeping procedures will be followed to reduce risks associated with these materials. These procedures include, but are not limited to: keeping materials in their original containers whenever possible, maintaining original labels and Material Safety Data Sheets (MSDSs), and using proper disposal methods for surplus materials. Some chemicals may require storage in a HAZMAT locker separate from flammables. Accidental spills that may occur will be contained as appropriate for the spilled medium (liquid or solid), and collected and containerized immediately after discovery of the spill. Containerized

material will be characterized for off-site transportation and disposal. The following spill mitigation equipment should be available on site during construction activities:

- Drip pans
- Oil-dry or similar compound
- Absorbent socks
- Shovels
- 55-gallon drums or storage tank (for containerization)
- Labels for contents identification

Following spill cleanup, the cause of the spill will be investigated, and material storage and handling procedures will be reviewed and revised where appropriate. All spills will be reported to the NSA Crane Environmental Department.

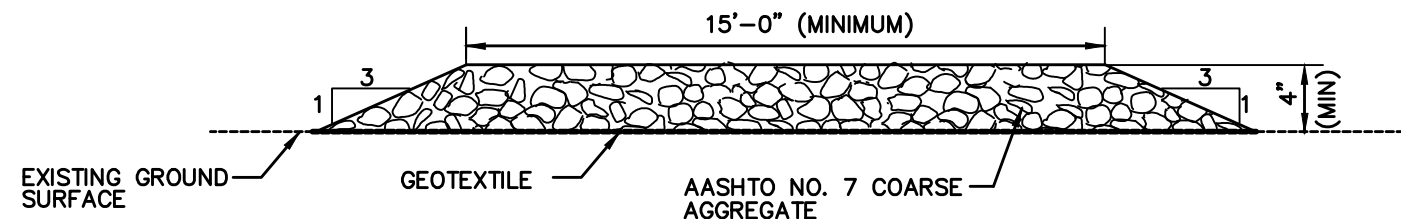




**NOTES:**

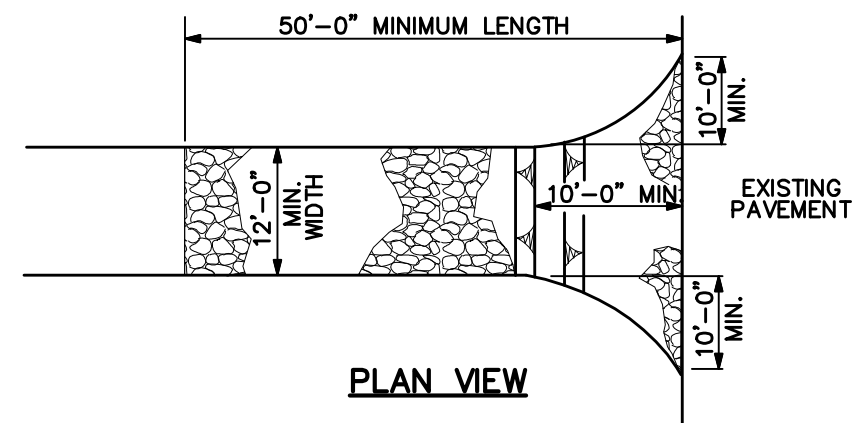
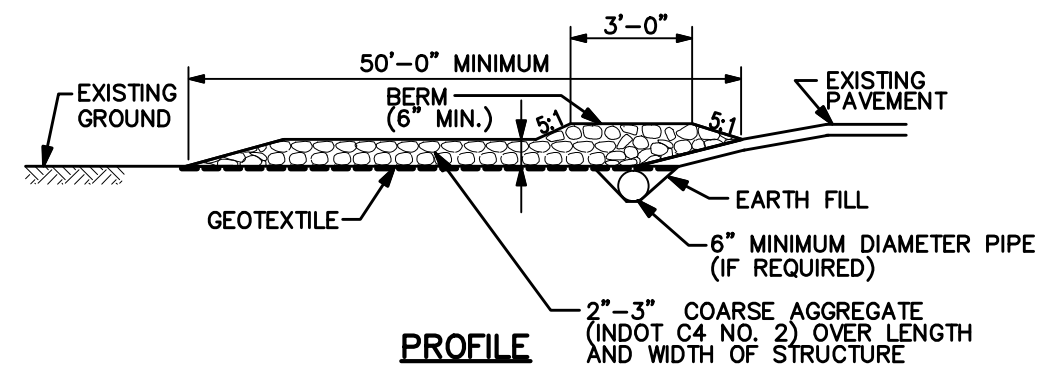
1. WOOD POSTS SHALL BE 1.5" BY 1.5" SQUARE (MIN) CUT OR 1.75" DIAMETER (MIN) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.
2. FILTER FABRIC SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
3. INSTALL SILT FENCE PARALLEL TO THE CONTOUR OF THE LAND.

## SILT FENCE



## TEMPORARY SITE ACCESS ROAD

NOT TO SCALE



**NOTES:**

1. ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE.
2. IF REQUIRED PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM DIAMETER WILL BE REQUIRED.

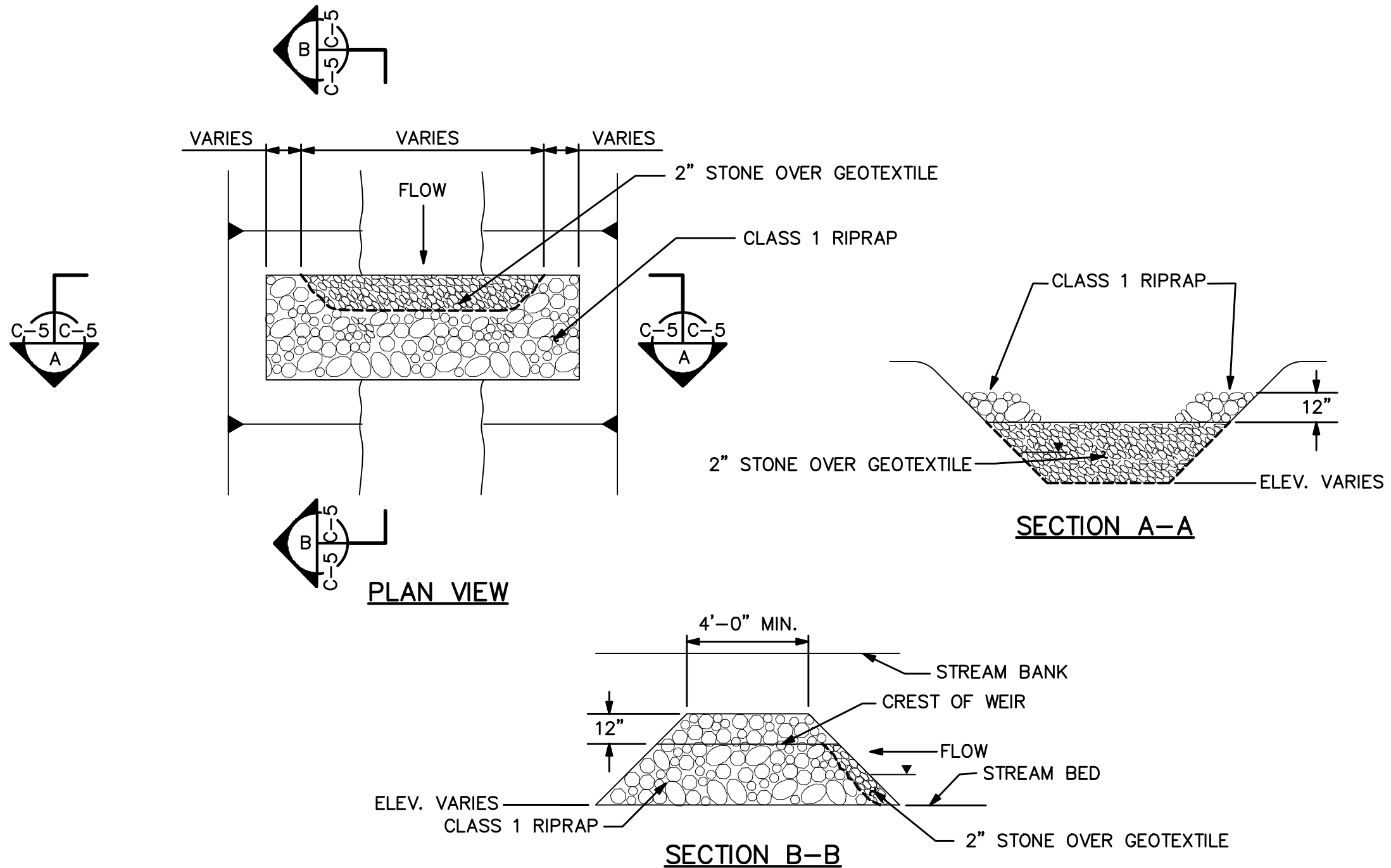
## GRAVEL CONSTRUCTION ENTRANCE

DRAWN BY MF	DATE 5/16/06
CHECKED BY RB	DATE 4/30/14
REVISED BY	DATE
SCALE AS NOTED	



EROSION AND SEDIMENT CONTROL DEVICES  
SWMU 23  
BUILDING 36 BATTERY SHOP  
INTERIM MEASURES WORK PLAN  
NSA CRANE  
CRANE, INDIANA

CONTRACT NO. -1008	
CTO NO. F272	
APPROVED BY	DATE
DRAWING NO. FIGURE 4-1	REV. 0



**NOTE:**

1. GABION BASKETS – GABION BASKETS WITH GEOTEXTILE CAN BE USED INSTEAD OF STONE.

# **IN-STREAM SEDIMENT TRAP**

NOT TO SCALE

DRAWN BY MF	DATE 5/16/06
CHECKED BY RB	DATE 4/30/14
REVISED BY	DATE
SCALE AS NOTED	



EROSION AND SEDIMENT CONTROL  
DEVICES (SHEET 2 OF 2)  
SWMU 23  
BUILDING 36 BATTERY SHOP  
INTERIM MEASURES WORK PLAN  
NSA CRANE  
CRANE, INDIANA

CONTRACT NO. -1008	
CTO NO. F272	
APPROVED BY	DATE
DRAWING NO. FIGURE 4-2	REV. 0

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## **APPENDIX A**

### **RFI FIELD REPORT**

- A.1 SITE FIELD FORMS**
- A.2 SITE PHOTOGRAPHS**
- A.3 GEOPHYSICAL FIELD NOTES**
- A.4 BUILDING 36 SITE DRAWINGS**

## **APPENDIX A**

### **2.0 SWMU 23 FIELD REPORT**

The following information presents Section 2.0 of the SWMU 23 draft RFI Report along with supplemental information from the Field Task Modification Requests No. 1 and No. 2.

Several sampling events have been conducted at SWMU 23 between October 2012 and May 2014. This report describes the various sampling activities, procedures, and documentation utilized during these events. The field investigations were performed in October/November 2012, January 2013, May 2013, March/April 2014, and May 2014. The October/November 2012 and the January 2013 field events were conducted under the original UFP- SAP (Tetra Tech 2012)); the May 2013 field event was conducted under Field Task Modification Request (FTMR) No. 1, and the March/April 2014 and May 2014 field events were conducted under FTMR No. 2.

#### **2.1 OVERVIEW**

SWMU 23 (Battery Shop Building 36) is contained within the boundary of NSA Crane in the north-central portion of the facility, and encompasses approximately 6.5 acres (Figure 1-1 of the IMWP). SWMU 23, as presented on Figure 1-2 of the IMWP, is bounded on the north and west by heavily wooded areas with steep hillsides. Nearby Building 34 is located approximately 240 feet to the east, and is presumed to be hydraulically upgradient of SWMU 23 based on topography.

SWMU 23 consists of an active building which houses a battery storage area, an oil/ water separator (O/WS), a suspected fuel underground storage tank (UST), and a former debris disposal area. The field sampling events included surface and subsurface soil sampling, and surface water and sediment sampling. Table 2-1 presents the collection method and lab analysis summary for each sample. Several proposed subsurface samples were not collected because of the shallow depth of bedrock along the hill slope. Also, two surface water samples and one sediment sample were unable to be collected because of insufficient available sample volume. The geophysical investigation was conducted in an area immediately west of Building 36 to determine if a UST still exists at the site.

All work performed for the field investigations were conducted in accordance with the procedures and methodologies described in the IDEM-approved UFP-SAP (Tetra Tech, 2012). Standard Operating Procedures (SOPs) that governed the field work were included in Appendix B of the approved UFP-SAP. Various field forms, geophysical field notes, and site photographs associated with the field events are

provided in this report in Appendices A-1 through A-3, respectively. Historical Building 36 site drawings are presented in Appendix A-4.

## **2.2 MOBILIZATION / DEMOBILIZATION**

Following approval of the various planning documents (UFP-SAP/ FTMRs), Tetra Tech personnel began initiation of mobilization activities. All field team members reviewed the approved planning document, any associated appendices, and the Health and Safety Plan (HASP) prior to the start of project activities. In addition, the Field Operations Leader (FOL) held a field team orientation meeting to ensure that personnel were familiar with the scope of the field activities.

Prior to the initiation of fieldwork, the FOL arrived at the site and began on-site mobilization activities. These activities included coordination with NSA Crane personnel, and utility clearance of all proposed boring locations through the Indiana Underground Plant Protection Service (IUPPS). The equipment required for the field activities was shipped to the site. At the conclusion of field activities, the FOL completed the decontamination and demobilization of all equipment.

## **2.3 SITE INVESTIGATION METHODOLOGIES AND PROCEDURES**

### **2.3.1 Sample Collection Methods**

During the SWMU 23 field investigations, soil and sediment samples were collected via hand auger, plastic trowel, or direct-push technology (DPT). Surface water samples were collected directly into the sample containers.

#### **Hand Auger**

Hand augering involves manually turning a 2.5-inch (or similar) diameter stainless steel bucket auger into the ground surface to the desired sample depth. All hand augered soil borings at SWMU 23 were advanced to the proposed depth, unless refusal was encountered prior to that depth. If refusal (other than bedrock surface) was encountered, the auger was removed and repositioned nearby until the desired depth was obtained. The auger's bucket was decontaminated in the field between each sample location.

#### **Hand Trowel**

Sampling of the drainageway sediment was accomplished by use of a dedicated, disposable, plastic hand trowel. A new disposable hand trowel was used at each sample location.

## **DPT**

The DPT was utilized to collect soil samples from all other areas where access permitted its use. A dedicated, macrocore acetate liner was pushed into the soil to the desired sample depth. Upon removing the macrocore liner, it was cut open to allow access to the sample. The soil was scanned the length of the macrocore liner for volatile organic compounds (VOCs) utilizing a photoionization detector (PID). The soil was also visually inspected by the Site Geologist for any visible signs of contamination (i.e., staining). If soil staining was encountered, or elevated PID readings were recorded, the VOC sample was collected from that portion of the soil core liner; otherwise, the VOC sample was collected from the liner as stated below.

- From 0 to 1 foot bgs, if neither the PID readings were greater than background, nor any visible discoloration was observed, the VOC sample was collected at 6 inches from the top of the soil core.
- From 0 to 2 feet bgs, if neither the PID readings were greater than background nor any visible discoloration was observed, the VOC sample was collected from three-fourths the distance from the top of the soil core.
- From greater than 2 feet bgs (e.g., subsurface samples), if neither the PID readings were greater than background nor any visible discoloration was observed, then the VOC sample was collected from three-fourths the distance from the top of the soil core.

For samples other than VOCs, the material from the sleeve was initially placed in a Ziploc bag where it was thoroughly homogenized prior to collecting the sample and placing it in the appropriate sample container.

## **Direct Fill**

Sampling of the drainageway surface water was accomplished by placing the sample bottle directly beneath the water's surface. For VOC and dissolved metals samples, caution was exercised as to not spill the sample perseverative within the bottles.

### **2.3.2 Sample Logging**

Boring logs and/or soil sample log sheets were maintained for each sample collected during the SWMU 23 field events. All sample log sheets, field notes, and chain-of-custody forms are included in Appendix A-1.



## **2.4 SAMPLING OPERATIONS**

A total of 333 soil, 7 drainageway sediment, 1 subsurface structure sediment, and 6 surface water samples were collected at SWMU 23. Table 2-1 presents the samples collected and the laboratory analyses for each.

The principal potential contaminant release and migration pathways investigated were:

- Documented direct discharge to surface soil (historical dumping).
- Documented direct discharge of contaminants from dumping or spills to surface water drainage pathways.
- Spills from material handling (e.g., solvents) or accidents in Building 36 or near the suspected UST.
- Direct discharge from building drains or the O/WS of battery acids, solvents, and/or oils.
- Leaks from storage tanks (fuel tank, solvent/degreaser) or associated piping.
- Transport via surface runoff, leaching to deeper soil and groundwater, discharge of contaminated groundwater at hillside seeps, downgradient migration of surface water and sediment in drainage channels, and downgradient migration of groundwater.

### **2.4.1 Soil Sampling**

#### **October/November 2012**

Soil samples were typically collected downgradient from potential source areas (i.e., O/WS and former UST), along the hillside downgradient of the building, and in the area where dumping historically occurred.

Twenty-three surface soil samples (from borings 23SB001 through 23SB023) and 12 subsurface soil samples (from borings 23SB001 through 23SB006 and 23SB024 through 23SB026) were collected (see Figure 2-1). All surface soil samples were submitted to the fixed-base laboratory (FBL) for analysis of: VOCs, total petroleum hydrocarbons (TPH) gasoline range organics/extended range organics/diesel range organics (GRO/ERO/DRO), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), metals, sulfate, and pH. All subsurface soil samples were submitted to the FBL for analysis of: VOCs, TPH GRO/ERO/DRO, PAHs, and metals.

## **May 2013**

Based on the laboratory results from the October/November 2012 field event, supplemental surface and subsurface soil samples were collected as proposed in the FTMR No.1 to determine the horizontal extent of PAHs and metals (lead) contamination at SWMU 23.

Eleven surface soil samples and eight subsurface soil samples were collected from boring locations 23SB027 through 23SB037 (see Figure 2-1 of the IMWP). All samples collected from 23SB027 through 23SB032 were submitted to the FBL for PAH analysis only. The samples collected from 23SB033 through 23SB037 were submitted to the FBL for metals (lead) analysis only.

## **March/April 2014**

To further refine the areas of contamination for potential excavation, supplemental surface and subsurface soil samples were collected in March 2014 as proposed in the FTMR No. 2 to delineate the vertical and horizontal extent of PAHs and metals (lead) contamination at SWMU 23. An additional seven samples were collected and analyzed for lead only in April 2014 (see Figure 2-1 of the IMWP).

Seventy-one soil samples were collected from boring locations 23SB002, 23SB003, and 23SB038 through 23SB081. The subsurface soil samples collected from former locations 23SB002 and 23SB003 were to determine the vertical extent of the PAH contamination at those locations; samples collected from new boring locations 23SB048 through 23SB075 were to determine the extent of the PAH contamination; and samples collected from new boring locations 23SB038 through 23SB047 and 23SB076 through 23SB081 were to delineate the lead contamination at the site.

## **May 2014**

Data gaps still existed at the site for vertical delineation of PAHs and lateral delineation for lead; therefore, additional surface and subsurface soil samples were collected in May 2014 to complete the delineation at SWMU 23. An additional 18 samples were collected and analyzed for PAHs and an additional 25 samples were collected and analyzed for lead ((see Figure 2-1 of the IMWP).

Nine samples were collected from former boring locations 23SB001, 23SB004, 23SB048, 23SB059, and 23SB073 and analyzed for PAHs. These soil samples were collected to determine the vertical extent of the PAH contamination at these locations. Nine samples were collected from new boring locations 23SB090, 23SB091, and 23SB092 and analyzed for PAHs. These soil samples were collected to refine the distance between former locations. Twenty-five samples were collected from new boring locations

23SB082 through 23SB089 and 23SB092 and analyzed for lead to delineate the lead contamination at the site.

#### **2.4.2      Drainageway Surface Water and Sediment Sampling**

Six surface water samples (23SW001 through 23SW006) and six collocated sediment samples (23SD001 through 23SD006) were collected from six discrete locations within surface water drainageways at SWMU 23. All sediment samples were collected at a depth of 0 to 0.5 foot bgs. No samples were collected from location 23SW/SD007 because of the lack of sufficient sediment volume (bedrock was at the surface), and surface water was not present.

The surface water samples were submitted to the FBL for TPH GRO/ERO/DRO, hardness, and total and dissolved metals analyses. The majority of the sediment samples were submitted to the FBL for VOCs, PAHs, PCBs, metals, and total organic carbon (TOC) analysis. Sample 23SD009-0006, collected in May 2013, was only analyzed for VOCs, PAHs, and metals.

All sediment and surface water sample locations are presented on Figure 2-2 of the IMWP.

#### **2.4.3      Oil/Water Separator Sediment Sampling**

One sediment sample (23SD008-0006) was collected from the base of the O/WS (see Figure 2-2 of the IMWP). The sample was collected at a depth of approximately 0 to 4 inches below the top of the residue at the base of the structure. The structure is approximately 5 feet deep.

This sediment sample was submitted to the FBL for analysis of VOCs, TPH GRO/ERO/DRO, PAHs, PCBs, metals, and TOC.

#### **2.4.4      Soil Density Sampling**

Samples were collected at various depth intervals at SWMU 23 in order to determine the soil density at the site for purposes of calculating soil weights during potential excavation activities. Four samples were collected from depth intervals of 1.5 to 2.0, 2.5 to 3.0, 3.5 to 4.0, and 5.0 to 5.5 feet bgs. The soil density test results can be found in Appendix A-1 of this report.

### **2.5          GPS/SURVEY**

Each proposed sample location at SWMU 23 was initially located by Tetra Tech personnel utilizing a Trimble XH Global Positioning System (GPS) unit. Proposed sample locations under the asphalt along Building 36 were marked utilizing utility paint, while proposed sample locations along the hillside and in the

wooded area were marked with a brightly colored pin flag pushed into the ground next to the proposed location. Upon completion of the October/November 2012 SWMU 23 sampling event, the sample locations were re-visited and surveyed by a professional surveyor licensed in the State of Indiana. Prior to the March 2014 field effort, all newly proposed sample locations were also surveyed by a professional surveyor.

## **2.6 GEOPHYSICAL SURVEY**

A geophysical survey was conducted to determine the presence or absence of a suspected UST by Tetra Tech on January 22, 2013 using a Geonics, Ltd. EM61-MK2 (EM61) electromagnetic instrument, a GSSI SIR-2000 ground penetrating radar (GPR) system equipped with a 400 megahertz (MHz) antenna, and a magnetic locator instrument (Schonstedt GA-72). Standard operating procedures for the geophysical survey were provided in SOP-11 (Geophysical Survey for Underground Storage Tanks) of the SAP (Tetra Tech, 2012). Appendix A.3 presents the geophysical field notes.

The geophysical survey was conducted after intrusive site investigation activities (i.e., soil borings) had been conducted at the site. The geophysical survey equipment was utilized to survey an approximately 30-foot by 70-foot area centered on the location of the suspected buried tank, as shown on the historical engineering drawings (see Section 1.2.4 of the draft RFI Report). The longer dimension of the survey area (70 feet) was oriented along the long dimension of the buried tank depicted on the drawings (long dimension oriented in a northeast-southwest direction).

Before the geophysical survey was conducted, a survey grid was established in the field by placing 5-foot spaced survey grid markings using taped measurements. Next, all geophysical survey equipment was set up and checked in accordance with manufacturer's recommendations (including instrument calibrations, and a go/no go magnetic locator instrument check that indicated that the unit was capable of detecting ferrous objects).

The EM61 survey was performed along parallel survey lines spaced 2.5 feet apart in the northeast-southwest direction. The GPR survey was performed along parallel lines spaced 2.5 feet apart in two mutually perpendicular directions (both northeast-southwest and northwest-southeast directions). The magnetic locator survey was performed along 5-foot spaced lines in the northeast-southwest direction while the magnetic locator was moved side to side to cover 5 feet of survey width along each survey line. Data station spacing for the EM61 survey was triggered by a survey wheel at 8-inch intervals, and GPR data were collected at 32 scans per second while the GPR antenna was moved along the survey lines at a slow walking pace (corresponding to GPR stations less than 1 inch apart). The survey techniques provided thorough survey coverage of the area of interest. Penetration of the GPR signal into the ground was judged to be between 6 to 9 feet below ground surface (bgs) using handbook time to depth

conversion for GPR signal velocities in average soils (a 60 nanosecond time window was used for the survey). Multiple-thousand gallon capacity steel USTs can normally be detected 6 to 10 feet deep using EM61 and magnetic locator instruments.

A color contour map of the EM61 data and a comprehensive interpretation of the geophysical data for the area of interest are displayed in Appendix A on Figure 2-3 in relation to Building 36 and other semi-permanent site features measured and located (tied-in) during the survey. The dark blue EM61 color contour represents an absence of detected metal, and EM61 color contours up the color bar represent anomalous response amplitudes in increasing value. The pink color contour represents the instrument responses with the highest values; however, depth, metallic size, and mass also play a key factor in the measured instrument response. The deeper a metallic object is buried, the lower its EM61 response amplitude. Therefore, EM61 amplitude does not provide a unique solution. The EM61 survey area data indicate generally that the survey area appears devoid of metallic presence. A linear anomalous EM61 response near an existing gas meter and gas line shown in Appendix A on Figure 2-3 has been attributed as a possible underground gas line. The only other notable EM61 anomalies are located next to: a fire hydrant valve; a gas meter and line surrounded by protective steel bollards; metallic building doors and apparent aluminum building siding; a reinforced concrete pad; and an engine staged on a palette in the upper right corner of the survey area. These anomalous EM61 responses appear to be attributable to the aboveground metallic items present.

The magnetic locator survey did not detect any large buried ferrous metallic objects in the survey area; only small items were detected. These small detected items were judged to be too small to be even a small UST, and their locations were not noted.

No GPR reflections consistent with those expected for a UST were detected by the GPR survey. GPR data appear to indicate a subsurface disturbed soil area in the location of the historical UST shown on Figure 2-1. This disturbed area has been interpreted as a GPR-inferred UST grave (an apparent backfilled area where it is believed that a UST had once been located and since removed). The location of the inferred UST grave is shown by a gray hatched polygon in Appendix A on Figure 2-3. Figure 2-4, in Appendix A, shows GPR data along two profiles crossing the inferred UST grave, and coordinates provided on each profile correspond to the survey grid coordinate system shown on the results figure (Figure 2-3). The top profile on Figure 2-4 (collected along the 20East or 20E survey line) appears to cross the UST grave along the longer axis of the disturbed area, and the bottom profile on the figure (collected along the 25North or 25N survey line) appears to cross the UST grave along the shorter axis of the disturbed area. Possible former sidewalls of the inferred UST excavation are annotated on both GPR profiles displayed on Figure 2-4, and interpreted subsurface utilities are labeled on the top profile of the figure.

A linear GPR anomaly has been interpreted as a possible utility along the northern edge of the survey area, and its location and approximate depth are shown on Figure 2-3. The interpreted gas line detected by the EM61 survey was also detected with GPR, and the approximate depth of this gas line estimated from GPR data is also provided on Figure 2-3. Several small unidentified buried objects have also been interpreted from GPR data, and their locations and approximate depths are also noted on Figure 2-3 by an X symbol. None of the GPR reflections from these small unidentified buried objects appear to be close to the size and shape typically expected for GPR reflections from a small to a large UST. No apparent UST piping was observed during the geophysical survey.

Based on the results of the geophysical survey, it is concluded that no UST is currently located within the surveyed area.

## **2.9 DEVIATIONS FROM THE SWMU 23 UFP-SAP/FTMR**

Any deviations from the SWMU 23 UFP-SAP/FTMRs are explained below and summarized in Table 2-1 of Appendix A:

- Sixteen surface soil samples, proposed in the UFP-SAP to be collected from 0 to 2 feet bgs, were collected from shallower depths because refusal was encountered prior to 2 feet bgs (see Table 2-1 for sample IDs and associated sample collection depths).
- The surface soil samples from borings 23SB024, 23SB025, and 23SB026, proposed in the UFP-SAP to be collected from 0 to 2 feet bgs, were not collected because of the presence of gravel backfill present from 0 to 4 feet bgs at these locations. Therefore, at each of these locations only subsurface soil samples were collected.
- Subsurface soil samples proposed in the UFP-SAP were not collected from 17 boring locations (i.e., 23SB007 through 23SB023) because of refusal at less than 2 feet bgs.
- Two subsurface soil sample locations (23SB030 and 23SB032), proposed in the FTMR to be collected from 2 to 4 feet bgs, were collected from 2 to 3 feet bgs, because refusal was encountered prior to 4 feet bgs.

## **2.10 FIELD SAMPLE DOCUMENTATION**

Sample documentation consisted of the completion of sample log sheets, chain-of-custody records, field logbooks, and health and safety documentation. The sample log sheets contain information such as: sample location and sample identification number; container requirements and analyses to be performed;

and sample type, time, and date. Any unusual circumstances encountered during sample collection were noted on the form. Sample log sheets can be found in Appendix A-1. Chain-of-custody forms (Appendix A-1) were used to track each sample from collection to receipt and analysis at the FBL.

## **2.11 SAMPLE HANDLING, PACKAGING, AND SHIPPING**

Sample handling activities included field-related considerations concerning the selection of sample containers, allowable holding times, sample custody, and maintaining samples at the appropriate storage temperature. All sample containers shipped to the FBL were wrapped in bubble wrap and sealed in plastic bags to minimize the possibility of breakage and spillage during transport. The sample containers were then placed in a cooler lined with a large plastic garbage bag and covered with ice. A temperature blank was placed in each cooler prior to shipment. Coolers containing samples for VOC analysis also contained a trip blank. The plastic garbage bag was sealed with a knot, and the chain-of-custody form was sealed in a Ziploc bag and taped to the inside of the cooler lid. A signed and dated custody seal was applied to each end of the cooler and then covered with strapping tape to provide a tamper-evident seal. A FedEx air bill was applied to the shipping cooler. Tetra Tech maintained custody of the samples until they were relinquished to FedEx. The FedEx tracking number (air bill number) was recorded on the chain-of-custody form, and the sender's copy of the airbill was maintained for shipment tracking, if needed. All samples were shipped to the FBL for overnight delivery and were received within sample holding times.

## **2.12 QUALITY CONTROL SAMPLES**

Quality Assurance/Quality Control (QA/QC) samples were generated and collected during sampling activities to monitor both field and lab procedures, in accordance with the approved SAP (Tetra Tech, 2012). QA/QC samples consisted of field duplicates, equipment rinsate blanks, trip blanks, and temperature blanks, and are described below.

- Field Duplicates - consisted of a single sample split into two portions. Field duplicates were collected at the rate of 1 in 20 per media and analyses to assess the overall precision of the sampling and analysis program.
- Equipment Rinsate Blanks - obtained under representative field conditions by collecting the rinse water generated by running analyte-free water through or over sample collection equipment after decontamination and before use. One equipment rinsate blank was collected per item of sampling equipment (e.g., auger bucket). Equipment rinsate blanks were analyzed for the same chemical constituents as the associated environmental samples.

- Trip Blanks - used to determine whether contamination of VOC samples had occurred during transit or storage. Trip blanks consisted of analyte-free water taken from the FBL to the site and returned to the FBL. One trip blank was submitted to the FBL in each cooler that contained samples for VOC analyses, and was analyzed for VOCs only.
- Temperature Blanks - used to determine if samples were adequately cooled during shipment. Temperature blanks consisted of analyte-free water poured into a clean sample container at the site or supplied by the FBL. One temperature blank was submitted to the FBL in each cooler, and the temperature was checked upon receipt at the FBL.

The QA/QC sample results were used in the analytical data validation process and the overall assessment of the quality of the data.

### **2.13 DECONTAMINATION**

The non-dedicated, non-disposable equipment (i.e., hand augers) involved in field sampling activities was decontaminated before beginning work, between sample locations, and at the completion of field activities.

### **2.14 INVESTIGATION-DERIVED WASTE (IDW) HANDLING**

The field investigation generated potentially contaminated wastes including personal protective equipment (PPE) and decontamination fluids. Management of each residue was performed as follows:

PPE – All PPE were double bagged and placed in NSA Crane trash receptacles (i.e., dumpsters).

Sampling Equipment Decontamination Fluids – All equipment decontamination fluids were collected and discharged to the NSA Crane permitted waste treatment plant.

Soil - All soil removed from a sample location that was not used as part of that sample was returned to its original boring.

### **2.15 SITE MANAGEMENT AND FACILITY SUPPORT**

The FOL was designated as the lead in coordinating all day-to-day activities during the investigation. The FOL was responsible for ensuring that all field team members (including subcontractors) were familiar with the approved SAP and the HASP in effect during this field investigation. Additionally, the FOL was responsible for all sampling operations, QA/QC, field documentation requirements, and field change



orders. The FOL reported to the Task Order Manager (TOM) on a daily basis regarding the status of fieldwork.

All site preparation, mobilization/demobilization, and sampling activities were coordinated through NSA Crane personnel through pre-visit communication, and meetings during the field work.

## **2.16 RECORDKEEPING**

Records (i.e., field log book) were maintained for the daily activities that took place during this field investigation. Other records including sample log sheets and chain-of-custody forms were also completed. Information recorded daily included field activities, weather conditions, identity and arrival and departure times of personnel, management issues, etc. Copies of daily activity records are included in Appendix A-1.

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 1 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
Soil Samples													
23SB001	23SS001-0002	SAP	10/07/12	DPT	X	X	X	X	X	X	--	--	--
	23SS001-0204	Delineation Sample	5/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SS001-0406	Delineation Sample	5/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SB001-1012	SAP	10/07/12	DPT	X	X	X	X	--	--	--	--	--
23SB002	23SS002-0002	RFI	10/07/12	DPT	X	X	X	X	X	X	--	--	--
	23SB002-0204	FTMR 2	3/26/14	DPT	--	--	X	--	--	--	--	--	--
	23SB002-0406	FTMR 2	3/26/14	DPT	--	--	X	--	--	--	--	--	--
	23SB002-1012	RFI	10/07/12	DPT	X	X	X	X	--	--	--	--	--
23SB003	23SS003-0002	SAP	10/07/12	DPT	X	X	X	X	X	X	--	--	--
	23SB003-0204	FTMR 2	3/26/14	DPT	--	--	X	--	--	--	--	--	--
	23SB003-0406	FTMR 2	3/26/14	DPT	--	--	X	--	--	--	--	--	--
	23SB003-0810	SAP	10/07/12	DPT	X	X	X	X	--	--	--	--	--

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 2 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB004	23SS004-0002	SAP	10/07/12	DPT	X	X	X	X	X	X	--	--	--
	23SS004-0204	Delineation Sample	5/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SS004-0406	Delineation Sample	5/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SB004-0810	SAP	10/07/12	DPT	X	X	X	X	--	--	--	--	--
23SB005	23SS005-0002	SAP	10/07/12	DPT	X	X	X	X	X	X	--	--	--
	23SB005-0810	SAP	10/07/12	DPT	X	X	X	X	--	--	--	--	--
23SB006	23SS006-0002	SAP	10/07/12	DPT	X	X	X	X	X	X	--	--	--
	23SB006-0608	SAP	10/07/12	DPT	X	X	X	X	--	--	--	--	Strong fuel -like odor
23SB007	23SS007-0002	SAP	11/01/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 1.8 ft bgs
23SB008	23SS008-0002	SAP	11/01/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 0.8 ft bgs
23SB009	23SS009-0002	SAP	11/01/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 1.2 ft bgs

**TABLE 2-1**  
**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 3 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB010	23SS010-0002	SAP	11/01/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 1.6 ft bgs
23SB011	23SS011-0002	SAP	11/01/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 1.8 ft bgs
23SB012	23SS012-0002	SAP	11/01/12	HA	X	X	X	X	X	X	--	--	--
23SB013	23SS013-0002	SAP	11/01/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 1.9 ft bgs
23SB014	23SS014-0002	SAP	10/31/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 0.5 ft bgs
23SB015	23SS015-0002	SAP	10/31/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 0.8 ft bgs
23SB016	23SS016-0002	SAP	10/31/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 0.3 ft bgs
23SB017	23SS017-0002	SAP	10/31/12	HA	X	X	X	X	X	X	--	--	Bedrock refusal at 1.3 ft bgs





TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 6 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB032	23SS032-0002	FTMR 1	05/19/13	HA	--	--	X	--	--	--	--	--	--
	23SB032-0204	FTMR 1	05/19/13	HA	--	--	X	--	--	--	--	--	Refusal at 3 ft bgs
23SB033	23SS033-0002	FTMR 1	05/19/13	HA	--	--	--	X	--	--	--	--	Refusal at 1 ft bgs
	23SB033-0204	FTMR 1	Sample Not Collected										
23SB034	23SS034-0002	FTMR 1	05/19/13	HA	--	--	--	X	--	--	--	--	--
	23SB034-0204	FTMR 1	05/19/13	HA	--	--	--	X	--	--	--	--	--
23SB035	23SS035-0002	FTMR 1	05/19/13	HA	--	--	--	X	--	--	--	--	Refusal at 1 ft bgs
	23SB035-0204	FTMR 1	Sample Not Collected										
23SB036	23SS036-0002	FTMR 1	05/19/13	HA	--	--	--	X	--	--	--	--	--
	23SB036-0204	FTMR 1	05/19/13	HA	--	--	--	X	--	--	--	--	--
23SB037	23SS037-0002	FTMR 1	05/19/13	HA	--	--	--	X	--	--	--	--	--
	23SB037-0204	FTMR 1	05/19/13	HA	--	--	--	X	--	--	--	--	--
23SB038	23SS038-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB039	23SS039-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB040	23SS040-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB041	23SS041-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB042	23SS042-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 7 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB043	23SS043-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB044	23SS044-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB045	23SS045-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB046	23SS046-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB047	23SS047-0002	FTMR 2	03/28/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB048	23SS048-0002	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SS048-0204	Delineation Sample	5/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SS048-0406	Delineation Sample	5/23/14	DPT	--	--	X	--	--	--	--	--	--
23SB049	23SS049-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB050	23SS050-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB051	23SS051-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB052	23SS052-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB053	23SS053-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB054	23SS054-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB055	23SS055-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB056	23SS056-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--



TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 8 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB057	23SS057-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB058	23SS058-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB059	23SS059-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SS059-0204	Delineation Sample	05/23/14	HA	--	--	X	--	--	--	--	--	--
23SB060	23SS060-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB061	23SS061-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB062	23SS062-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB063	23SS063-0002	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB063-0204	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB063-0406	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
23SB064	23SS064-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB064-0204	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB064-0406	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB065	23SS065-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB066	23SS066-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB066-0204	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB066-0406	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 9 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB067	23SS067-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB067-0204	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB067-0406	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB068	23SS068-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB068-0204	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB068-0406	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
23SB069	23SS069-0002	FTMR 2	03/21/14	HA	--	--	X	--	--	--	--	--	--
	23SB069-0204	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB069-0406	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
23SB070	23SS070-0002	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB070-0204	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB070-0406	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
23SB071	23SS071-0002	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB071-0204	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB071-0406	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
23SB072	23SS072-0002	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB072-0204	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB072-0406	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 10 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB073	23SS073-0002	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SS073-0204	Delineation Sample	5/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SS073-0406	Delineation Sample	5/23/14	DPT	--	--	X	--	--	--	--	--	--
23SB074	23SS074-0002	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB074-0204	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB074-0406	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
23SB075	23SS075-0002	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB075-0204	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
	23SB075-0406	FTMR 2	03/26/14	HA	--	--	X	--	--	--	--	--	--
23SB076	23SS076-0002	FTMR 2	04/17/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SB076-0203	FTMR 2	04/17/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	Bedrock refusal at 1.5 feet bgs
23SB077	23SS077-0002	FTMR 2	04/17/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB078	23SS078-0002	FTMR 2	04/17/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	Bedrock refusal at 0.8 feet bgs

**TABLE 2-1**  
**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
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Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB079	23SS079-0002	FTMR 2	04/17/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	Bedrock refusal at 1.4 feet bgs
23SB080	23SS080-0002	FTMR 2	04/17/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	Bedrock refusal at 1.5 feet bgs
23SB081	23SS081-0002	FTMR 2	04/17/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	Bedrock refusal at 0.8 feet bgs
23SB082	23SS082-0002	Delineation Sample	05/23/14	HA	--	--	--	X <sup>(2)</sup>	--	--	--	--	Bedrock refusal at 1.5 feet bgs
23SB083	23SS083-0002	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS083-0204	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS083-0406	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
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Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB084	23SS084-0002	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS084-0204	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS084-0406	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB085	23SS085-0002	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS085-0204	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS085-0406	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB086	23SS086-0002	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS086-0204	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS086-0406	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 13 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB087	23SS087-0002	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS087-0204	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS087-0406	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB088	23SS088-0002	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS088-0204	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS088-0406	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
23SB089	23SS089-0002	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS089-0204	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--
	23SS089-0406	Delineation Sample	05/23/14	DPT	--	--	--	X <sup>(2)</sup>	--	--	--	--	--

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 14 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
23SB090	23SS090-0002	Delineation Sample	05/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SS090-0204	Delineation Sample	05/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SS090-0406	Delineation Sample	05/23/14	DPT	--	--	X	--	--	--	--	--	--
23SB091	23SS091-0002	Delineation Sample	05/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SS091-0204	Delineation Sample	05/23/14	DPT	--	--	X	--	--	--	--	--	--
	23SS091-0002	Delineation Sample	05/23/14	DPT	--	--	X	--	--	--	--	--	--
23SB092	23SS092-0204	Delineation Sample	05/23/14	DPT	--	--	X	X <sup>(2)</sup>	--	--	--	--	--
	23SS092-0406	Delineation Sample	05/23/14	DPT	--	--	X	X <sup>(2)</sup>	--	--	--	--	--
	23SS092-0002	Delineation Sample	05/23/14	DPT	--	--	X	X <sup>(2)</sup>	--	--	--	--	--
<b>TOTALS</b>					<b>35</b>	<b>35</b>	<b>118</b>	<b>85</b>	<b>30</b>	<b>30</b>	<b>0</b>	<b>0</b>	

TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**  
**PAGE 15 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
Sediment Samples													
23SW/SD001	23SD001-0006	SAP	10/08/12	PT	X	--	X	X	X	--	X	--	None
23SW/SD002	23SD002-0006	SAP	10/08/12	PT	X	--	X	X	X	--	X	--	None
23SW/SD003	23SD003-0006	SAP	10/08/12	PT	X	--	X	X	X	--	X	--	None
23SW/SD004	23SD004-0006	SAP	10/08/12	PT	X	--	X	X	X	--	X	--	None
23SW/SD005	23SD005-0006	SAP	10/08/12	PT	X	--	X	X	X	--	X	--	None
23SW/SD006	23SD006-0006	SAP	10/08/12	PT	X	--	X	X	X	--	X	--	None
23SD008	23SD008-0006	SAP	10/08/12	PT	X	X	X	X	X	--	X	--	Sample collected from 0 –4-inches below top of residue; strong fuel-like odor
23SD009	23SD009-0006	FTMR 1	5/19/13	PT	X	--	X	X	--	--	--	--	None
TOTALS					8	1	8	8	8	0	7	0	



TABLE 2-1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY  
SWMU 23 – BATTERY SHOP BUILDING 36  
NSA CRANE  
CRANE, INDIANA  
PAGE 16 OF 17**

Sample Location	Sample ID	Planning Document	Sample Date	Sample Method	Analyses								
					VOC	TPH (GRO/ERO/DRO)	PAH	Metals	PCB	Sulfate/pH	TOC	Hardness <sup>(1)</sup>	Comments
Surface Water Samples													
23SW/SD001	23SW001	SAP	10/08/12	DF	--	--	X	X <sup>(3)</sup>	--	--	--	X	None
23SW/SD002	23SW002	SAP	10/08/12	DF	--	--	X	X <sup>(3)</sup>	--	--	--	X	None
23SW/SD003	23SW003	SAP	10/08/12	DF	--	--	X	X <sup>(3)</sup>	--	--	--	X	None
23SW/SD004	23SW004	SAP	10/08/12	DF	--	--	X	X <sup>(3)</sup>	--	--	--	X	None
23SW/SD005	23SW005	SAP	10/08/12	DF	--	--	X	X <sup>(3)</sup>	--	--	--	X	None
23SW/SD006	23SW006	SAP	10/08/12	DF	--	--	X	X <sup>(3)</sup>	--	--	--	X	None
TOTALS					0	0	6	6	0	0	0	0	

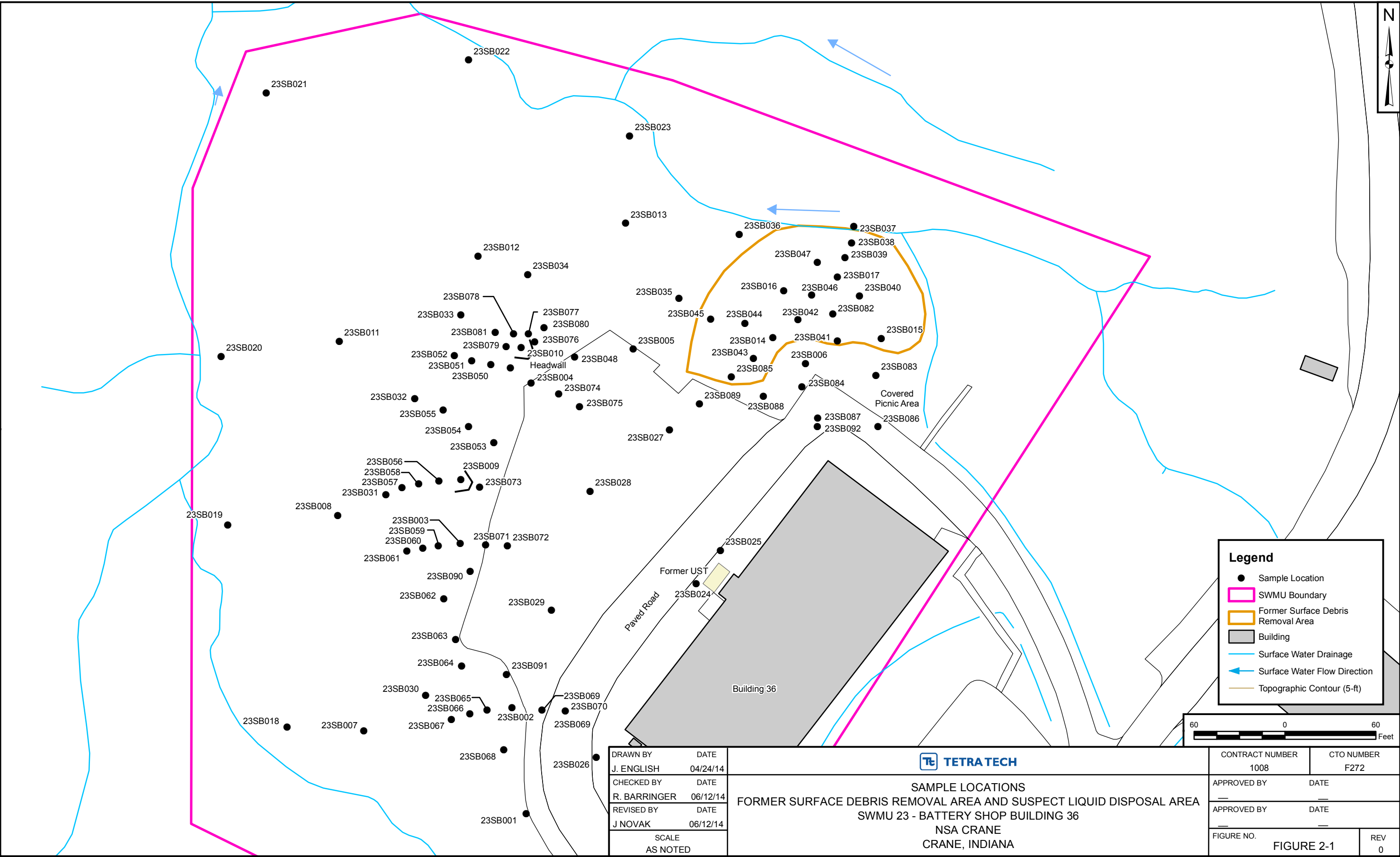
-- - Parameter Not Analyzed

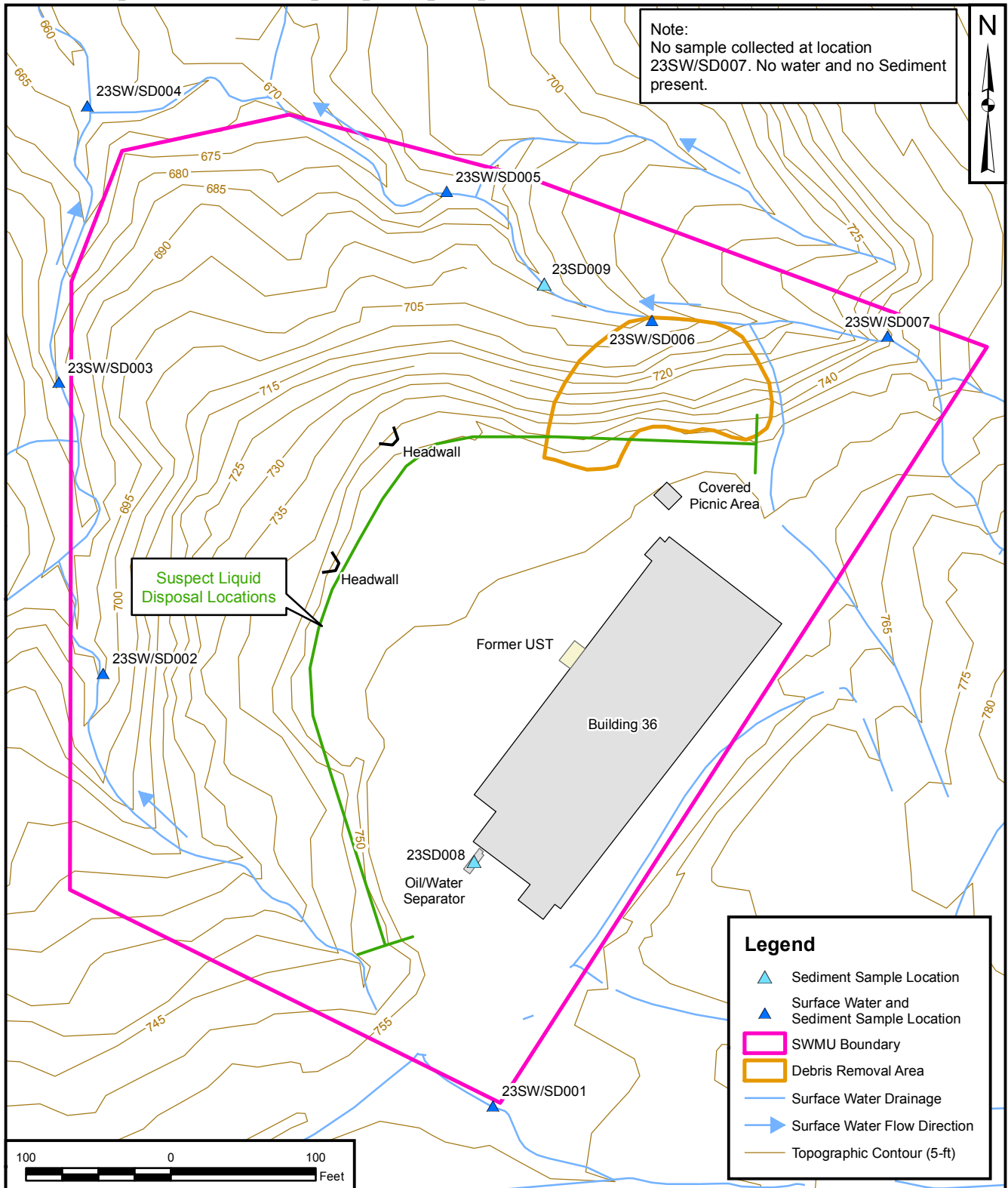
DF - Direct Fill  
DPT - Direct-Push Technology  
DRO - Diesel Range Organics  
ERO - Extended Range Organics  
GRO - Gasoline Range Organics  
PAH - Polycyclic aromatic hydrocarbons  
HA - Hand Auger  
PT - Plastic Trowel  
PCB - Polychlorinated Biphenyl  
TOC - Total Organic carbon  
TPH - Total petroleum hydrocarbons  
VOCs - Volatile Organic Compounds  
ft bgs - feet below ground surface

**TABLE 2-1**

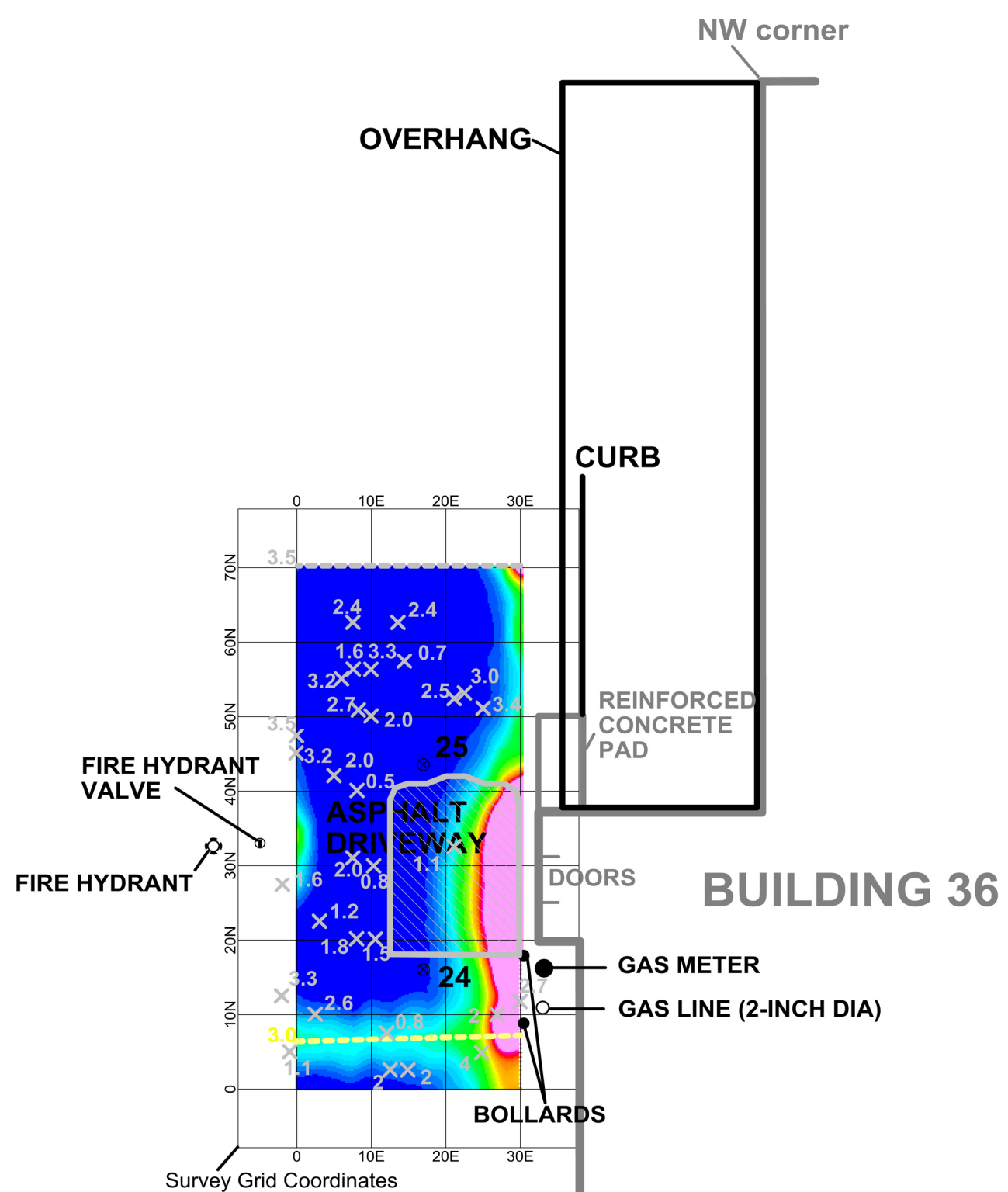
**SAMPLE COLLECTION AND ANALYSIS SUMMARY  
SWMU 23 – BATTERY SHOP BUILDING 36  
NSA CRANE  
CRANE, INDIANA  
PAGE 17 OF 17**

- (1) Hardness concentrations (as calcium carbonate) were calculated for each surface water sample based on the calcium and magnesium concentrations.
- (2) Pb Only.
- (3) Surface water samples were analyzed for both total and dissolved metals. For filtered surface water samples for dissolved analyses, “-F” was added to the end of the ID number (e.g., 23SW001-F).





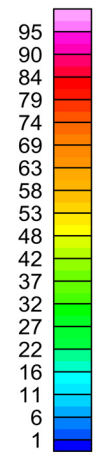
DRAWN BY K. MOORE CHECKED BY J. DUCAR REVISED BY J. NOVAK SCALE AS NOTED	DATE 08/05/11 DATE 06/13/14 DATE 06/13/14	<p><b>TETRA TECH</b></p> <p><b>SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS</b>  <b>SWMU 23 - BATTERY SHOP BUILDING 36</b>  <b>NSA CRANE</b>  <b>CRANE, INDIANA</b></p>	CONTRACT NUMBER 3539 CTO NUMBER F27Q APPROVED BY _____ DATE _____ APPROVED BY _____ DATE _____ FIGURE NO. 2-2 REV 0
---	--	--	--



### INTERPRETATION LEGEND

- GPR-inferred UST Grave
- Small Unidentified Buried Object (approximate depth noted in feet)
- Possible Underground Utility (approximate depth noted in feet)
- Possible Underground Gas Line (approximate depth noted in feet)

NOTE: Geonics, Ltd. EM61-MK2 Differential Channel data shown.

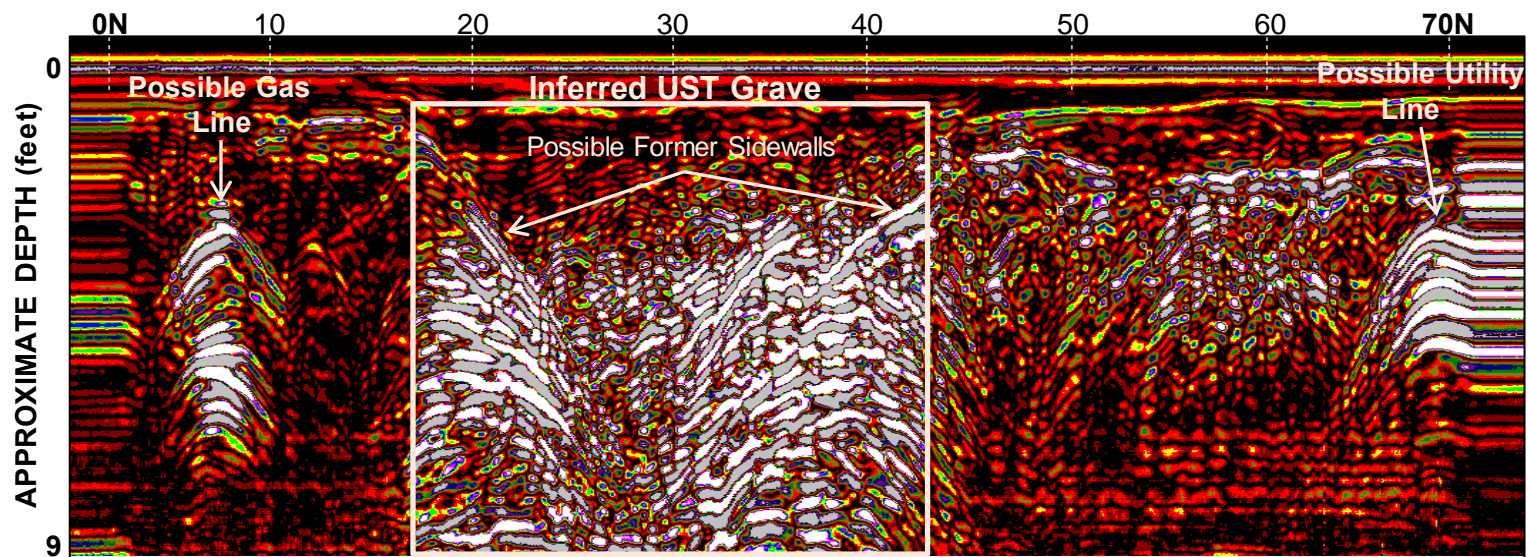


EM61 Response (millivolts)

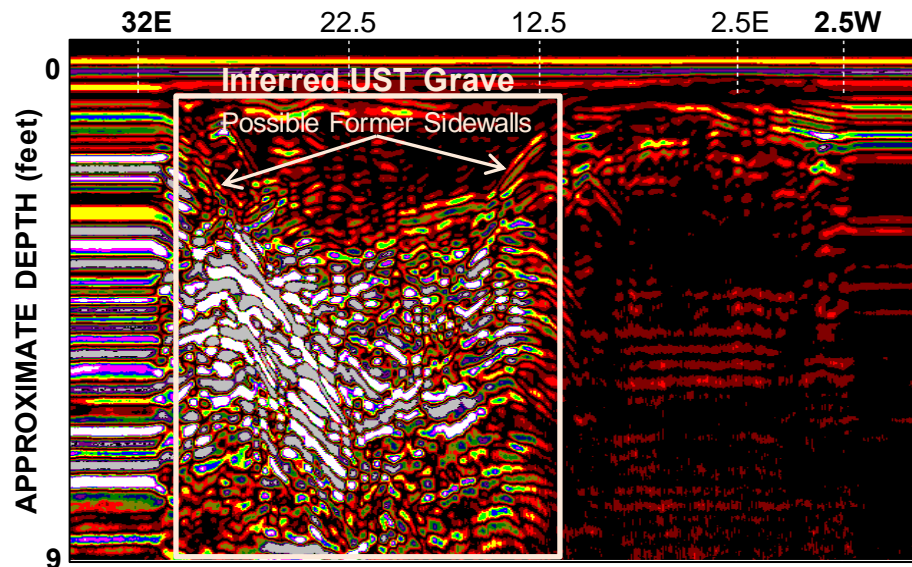
FIGURE GEO-1  
EM61 COLOR CONTOUR MAP AND GEOPHYSICAL SURVEY RESULTS

SWMU 23 - (BUILDING 36)  
NSA CRANE  
CRANE, INDIANA





GPR data profile along 20E Survey Line (in feet)



GPR data profile along 25N Survey Line (in feet)

**FIGURE GEO-2**  
**GPR DATA ACROSS**  
**INFERRED UST GRAVE**  
**SWMU 23 – (BUILDING 36)**  
**NSA CRANE**  
**CRANE, INDIANA**

## **A.1 SITE FIELD FORMS**





April 10, 2014

Project No. 2014-204-001

James Ferguson  
Tetra Tech NUS  
661 Anderson Drive  
Foster Plaza 7  
Pittsburgh, PA 15220

**Transmittal**  
**Laboratory Test Results**  
**NSA Crane 112I606018**

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens that were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,  
**Geotechnics, Inc.**

David R. Backstrom  
Laboratory Director

***We understand that you have a choice in your laboratory services  
and we thank you for choosing Geotechnics.***



## UNIT WEIGHT

(SOP - S37)

Client TETRA TECH  
 Client Reference NSA CRANE 112I606018  
 Project No. 2014-204-001  
 Lab ID 2014-204-001-001

Boring No. 72  
 Depth (ft) 0-3  
 Sample No. SWMU-23  
 Recovery (ft) 2.3

### DESCRIPTION

Black Sand

### DESCRIPTION

Brown Sand, some Clay,  
and Rock Fragments

#### MOISTURE CONTENT

#### Depth 2.5-2.9

#### Depth 1.5-2.0

Tare Number  
 Wt. Tare & WS(gm.)  
 Wt. Tare & DS(gm.)  
 Wt. Tare(gm.)  
 Moisture Content(%)

872  
 272.89  
 267.70  
 110.59  
 3.30

902  
 323.25  
 314.34  
 110.70  
 4.38

#### UNIT WEIGHT

Wt. Mold & WS.(gms.)  
 Wt. Of Mold(gms.)  
 Wt. Of WS.(gms.)  
 Length 1 (in.)  
 Length 2 (in.)  
 Length 3 (in.)  
 Top Diameter (in.)  
 Middle Diameter (in.)  
 Bottom Diameter (in.)  
 Sample Volume (cc)  
 Moisture Content(%)  
 Unit Wet Wt.(gms/cc)  
 Unit Wet Wt.(pcf.)  
 Unit Dry Wt.(gms/cc)  
 Unit Dry Wt.(pcf.)

185.80  
 21.81  
 163.99  
 4.61  
 4.60  
 4.60  
 1.27  
 1.28  
 1.28  
 96.33  
 3.30  
 1.70  
 106.2  
 1.65  
 102.8

235.70  
 22.41  
 213.29  
 4.84  
 4.84  
 4.83  
 1.27  
 1.28  
 1.26  
 100.32  
 4.38  
 2.13  
 132.7  
 2.04  
 127.1

Tested By TRE Date 4/8/14 Checked By KC Date 4/10/14

page 1 of 1

DCN: CT-S37A DATE:9-05-07 REVISION: 1

\\GEOSEVER\Drive\2014 GEOTECHNICAL PROJECTS\TETRA TECH\2014-204-001 NSA CRANE\Unit Wgts\2014-204-001-001 Unit Wgt. XLS\Sheet1

**UNIT WEIGHT**  
(SOP - S37)

Client TETRA TECH  
Client Reference NSA CRANE 112I606018  
Project No. 2014-204-001  
Lab ID 2014-204-001-002

Boring No. 72  
Depth (ft) 3-6  
Sample No. SWMU-23  
Recovery (ft) 2.7

	DESCRIPTION Light Brown Silty Clay	DESCRIPTION Brown Clay
	Depth 5.2-5.6	Depth 3.6-4.0
<b>MOISTURE CONTENT</b>		
Tare Number	565	589
Wt. Tare & WS(gm.)	282.09	242.49
Wt. Tare & DS(gm.)	252.70	208.55
Wt. Tare(gm.)	82.88	82.86
Moisture Content(%)	17.31	27.00
<b>UNIT WEIGHT</b>		
Wt. Mold & WS.(gms.)	220.99	178.29
Wt. Of Mold(gms.)	20.26	17.92
Wt. Of WS.(gms.)	200.73	160.37
Length 1 (in.)	4.51	4.07
Length 2 (in.)	4.53	4.07
Length 3 (in.)	4.53	4.09
Top Diameter (in.)	1.29	1.29
Middle Diameter (in.)	1.29	1.28
Bottom Diameter (in.)	1.28	1.28
Sample Volume (cc)	96.41	86.37
Moisture Content(%)	17.31	27.00
Unit Wet Wt.(gms/cc)	2.08	1.86
Unit Wet Wt.(pcf.)	129.9	115.9
Unit Dry Wt.(gms/cc)	1.77	1.46
Unit Dry Wt.(pcf.)	110.8	91.2

Tested By TRE Date 4/8/14 Checked By KC Date 4/10/14

page 1 of 1 DCN: CT-S37A DATE:9-05-07 REVISION: 1

\\GEOSEVER\Drive\2014 GEOTECHNICAL PROJECTS\TETRA TECH\2014-204-001 NSA CRANE\Unit Wgts\2014-204-001-002 Unit Wgt. XLS\Sheet1

## BORING LOG

PROJECT NAME:	NSA Crane SWMU 23
PROJECT NUMBER:	112G03539
DRILLING COMPANY:	Geo Logic
DRILLING RIG:	Geo Probe

BORING No.: 8 235B001  
DATE: 10/7/12  
GEOLOGIST: K. Losekamp  
DRILLER: Braidy Cockran

[illegible]

\* When rock coring, enter rock brokenness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks: Refusal at 14:21

Drilling Area  
Background (ppm): NA

Converted to Well:      Yes                      No ☒                      Well I.D. #:

## BORING LOG

PROJECT NAME:	NSA Crane SWMU 23
PROJECT NUMBER:	112G03539
DRILLING COMPANY:	Geo Logic
DRILLING RIG:	Geo Probe

BORING No.: 235B002  
DATE: 10/2/11  
GEOLOGIST: K. Losekamp  
DRILLER: Braid Cockran

[illegible]

\* When rock coring, enter rock brokenness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

### Drilling Area

Remarks: Refusal at 20'0.

MS/MSD on 0-2 + 10-12

Background (ppm): NA

**Converted to Well:**

**Yes**

No x

Well I.D. #:

# BORING LOG

PROJECT NAME:	NSA Crane SWMU 23
PROJECT NUMBER:	112G03539
DRILLING COMPANY:	Geo Logic
DRILLING RIG:	Geo Probe

BORING No.: 235B003  
DATE: 10/7/12  
GEOLOGIST: K. Losekamp  
DRILLER: Braidy Cockran

[illegible]

\* When rock coring, enter rock brokeness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks: Refusal at 12:30

Drilling Area  
Background (ppm): NA

Converted to Well:	Yes	No	x	Well I.D. #:
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**BORING LOG**

PROJECT NAME: NSA Crane SWMU 23  
 PROJECT NUMBER: 112G03539  
 DRILLING COMPANY: Geo Logic  
 DRILLING RIG: Geo Probe

BORING No.: 235B004  
 DATE: 10/7/12  
 GEOLOGIST: K. Losekamp  
 DRILLER: Braidy Cockran

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
S-1			1.5		Loose	Gray	fil-gravel w/ silt, clay sand	gw					
			4.0										
	4												
S-2			3.5										
			4.0										
	8												
S-3			3.0		Stiff	BLN	Silty Clay	CL					
			4.0										
	12												
S-4			1.5				more sand						
			2.0		Hard	BLN	weathered Sandstone						
				14' EOB									
	16												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: Refusal at 14.0

Drilling Area  
 Background (ppm): NA

Converted to Well: Yes            No x Well I.D. #:



Tetra Tech

**BORING LOG**Page 1 of 1

PROJECT NAME: NSA Crane SWMU 23  
 PROJECT NUMBER: 112G03539  
 DRILLING COMPANY: Geo Logic  
 DRILLING RIG: Geo Probe

BORING No.: 23SB005  
 DATE: 10/17/12  
 GEOLOGIST: K. Losekamp  
 DRILLER: Braidy Cockran

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
S-1			3/4		Loose gray fill - gravel/silt clay, sand gw								
	4												
S-2			4/4										
	8												
S-3			4/4		STIFF Bcm Silty Clay LL								
	12												
S-4			12'3" / 3	EOB	Hard gray green tuffaceous sandstone								
	16												
	20												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: Refusal at 12'3"

Drilling Area  
 Background (ppm): NA

Converted to Well: Yes        No x Well I.D. #:



**BORING LOG**

PROJECT NAME: NSA Crane SWMU 23  
 PROJECT NUMBER: 112G03539  
 DRILLING COMPANY: Geo Logic  
 DRILLING RIG: Geo Probe

BORING No.: 23513006  
 DATE: 10/7/12  
 GEOLOGIST: K. Losekamp  
 DRILLER: Braidy Cockran

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
			2		Loose	gray	fill - gravel - silt, sand clay						
			4										
	4												
			3.5	5.5	Soft	gray	Silty Clay	CL	greenish color				
			4						Strong fuel				
	8								odor from				
			4.0						6-8'				
			4										
	12												
			13'										
			13' 7"		Hard	BRN	weathered Sandstone						
			EOB										
	16												
	20												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: Refusal at 13' 7"
 Drilling Area  
 Background (ppm): NA

 Converted to Well: Yes        No x Well I.D. #:



**BORING LOG**

PROJECT NAME: NSA Crane SWMU 23  
 PROJECT NUMBER: 112G03539  
 DRILLING COMPANY: Geo Logic  
 DRILLING RIG: Geo Probe

BORING No.: 235B024  
 DATE: 10/2/12  
 GEOLOGIST: K. Losekamp  
 DRILLER: Braidy Cockran

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency/ or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
S-1					Loose	gray	Gravel	SW					
			3.0										
	2												
			4.0										
	4												
S-2			3.0		Stiff BRN		Silty clay	CL					
	6												
			4.0	7'4"									
	8			7'8"	Hard gray weathered Sandstone								
	10												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: Refusal at 7'8"

Drilling Area  
 Background (ppm): NA

Converted to Well: Yes        No x Well I.D. #:

**BORING LOG**

PROJECT NAME: NSA Crane SWMU 23  
 PROJECT NUMBER: 112G03539  
 DRILLING COMPANY: Geo Logic  
 DRILLING RIG: Geo Probe

BORING No.: 235B025  
 DATE: 10/7/12  
 GEOLOGIST: K. Losekamp  
 DRILLER: Braidy Cockran

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
S-1			2.5	1.5 -			Asphalt	gr					
					Loose	gray	gravel						
			4.0										
	4			9'									
S-2			4.0		stiff	BRN	Silty Clay	CL					
			4.0	7'8"	Hard	gray	weathered Sandstone						
	8			EOB									
	12												
	16												
	20												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: Refusal at 7'8"

Drilling Area  
 Background (ppm): NA

Converted to Well: Yes        No x Well I.D. #:

**BORING LOG**

PROJECT NAME: NSA Crane SWMU 23  
 PROJECT NUMBER: 112G03539  
 DRILLING COMPANY: Geo Logic  
 DRILLING RIG: Geo Probe

BORING No.: 23 SB 026  
 DATE: 10/7/12  
 GEOLOGIST: K. Losekamp  
 DRILLER: Braidy Cockran

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
S-1			2.5	1'	Hard	Blk	Asphalt	gw					
					Loose	white	gravel	gw					
			4.0										
	4												
S-2			3.5		Stiff	Bcn	Silty Clay		Strong fuel odor from 4-6				
			4.0						Slight fuel odor from 6-8				
	8												
S-3			3.2						No odor after 8'				
			4.0										
	12			11' 9"	Hard	gray	weathered Sand stone						
S-4				12' 3"									
	16												
	20												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: Refusal at 12' 3"

Drilling Area  
 Background (ppm): NA

Converted to Well: Yes        No x Well I.D. #:

PROJECT NAME: NSA CRANE  
PROJECT NUMBER: 112G03539  
DRILLING COMPANY: TRIECO  
DRILLING RIG: DPT 54 DT

BORING No.: 23SB027  
DATE: 5/18/13  
GEOLOGIST: CONTI  
DRILLER: D. SAMSEL

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm):

Converted to Well: Yes No ☒ Well I.D. #: NA

## BORING LOG

PROJECT NAME: NSA CRANE  
PROJECT NUMBER: 112G03539  
DRILLING COMPANY: TRI ECO  
DRILLING RIG: DPT 54 DT

BORING No.: 23SB028  
DATE: 5/18/13  
GEOLOGIST: CONTI  
DRILLER: D SAMSEL

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm):

Converted to Well: Yes No ☒ Well I.D. #: NA

## BORING LOG

PROJECT NAME: NSA CRANE  
PROJECT NUMBER: U2G03539  
DRILLING COMPANY: TRI ECO  
DRILLING RIG: DPT 54 DT

BORING No.: 23SBO29  
DATE: 5/18/13  
GEOLOGIST: CONTI  
DRILLER: D SAMSEL

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm): 6

Converted to Well: Yes No ☒ Well I.D. #: N/A





PROJECT NAME: NSA CRANE SWMU 23  
PROJECT NUMBER: 112IG06018  
DRILLING COMPANY: CH2M  
DRILLING RIG: GEO PROBE

BORING No.: 2358003  
DATE: 3-26-2014  
GEOLOGIST: FERGUSON  
DRILLER: N. FARRER

[illegible]

\* When rock coring, enter rock brokenness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks:

Drilling Area  
Background (ppm):

Converted to Well:	Yes	No	Well I.D. #:
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## Page \_\_\_\_ of \_\_\_\_

BORING No.: 235B048  
DATE: 3-26-14  
GEOLOGIST: FERNANDSON  
DRILLER: N. FERREE

[illegible]

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm):

Converted to Well:	Yes	No	Well I.D. #:
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Page      of     

BORING No.: 2358063  
DATE: 3-26-14  
GEOLOGIST: FERNANDEZ  
DRILLER: N. FERRER

[illegible]

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks:

Drilling Area  
Background (ppm):

Converted to Well:	Yes	No	Well I.D. #:
--------------------	-----	----	--------------





## BORING LOG

Page \_\_\_\_ of \_\_\_\_

PROJECT NAME: N31A Grande SWMC 33  
PROJECT NUMBER: 112IG06018  
DRILLING COMPANY: C. H. H. H.  
DRILLING RIG: 660P2086

BORING No.: 235B069  
DATE: 3-26-14  
GEOLOGIST: KERIGSON  
DRILLER: N. Terrell

[illegible]

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm):

Converted to Well:	Yes	No	Well I.D. #:
--------------------	-----	----	--------------

## BORING LOG

PROJECT NAME: NSA CYANE SWMU 23  
PROJECT NUMBER: 112IG06018  
DRILLING COMPANY: CH2M  
DRILLING RIG: GEOPROBE

BORING No.: 23JB070  
DATE: 3-26-2014  
GEOLOGIST: FERGUSON  
DRILLER: N. FERGEE

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm):

Converted to Well:	Yes	No	Well I.D. #:
--------------------	-----	----	--------------



## BORING LOG

PROJECT NAME:  
PROJECT NUMBER:  
DRILLING COMPANY:  
DRILLING RIG:

NSA CRANE SUMU 23  
112IG06018  
C14736

BORING No.: 2358071  
DATE: 9-26-2014  
GEOLOGIST: FERRIS  
DRILLER: N. FERRIS

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm):

**Converted to Well:**      Yes                  No                  Well I.D. #: \_\_\_\_\_





## BORING LOG

PROJECT NAME: NSA Permit SWMU 23  
PROJECT NUMBER: 112IG06018  
DRILLING COMPANY: ENR  
DRILLING RIG: GEORGE

BORING No.: 235BC73  
DATE: 3-26-14  
GEOLOGIST: FARRUSOIN  
DRILLER: M. FARRER

[illegible]

\* When rock coring, enter rock brokenness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks:

Drilling Area  
Background (ppm):

Converted to Well:	Yes	No	Well I.D. #:
--------------------	-----	----	--------------

## BORING LOG

PROJECT NAME: N5A BRANK SWIM023  
PROJECT NUMBER: 112IG06018  
DRILLING COMPANY: CH2M  
DRILLING RIG: GEOPROBE

BORING No.: 235B074  
DATE: 3-26-14  
GEOLOGIST: Ferguson  
DRILLER: N. Ferrel

[illegible]

\* When rock coring, enter rock brokenness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks:

### Drilling Area

Background (ppm):

**Converted to Well:**

**Yes**

No

Well I.D. #:



PROJECT NAME: NSA ARCADE SWAMP 23  
PROJECT NUMBER: 112IG06018  
DRILLING COMPANY: DITASE  
DRILLING RIG: GEOROSE

BORING No.: 235B075  
DATE: 3-26-14  
GEOLOGIST: Ferguson  
DRILLER: N. Ferrel

[illegible]

\* When rock coring, enter rock brokeness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks:

Drilling Area  
Background (ppm):

Converted to Well:	Yes	No	Well I.D. #:
--------------------	-----	----	--------------

PROJECT NAME:	NSA Crane - SWMU 23	BORING No.:	SB 038
PROJECT NUMBER:	112IG06018	DATE:	MARCH 28, 2014
DRILLING COMPANY:	Chase	GEOLOGIST:	J. Ferguson
DRILLING RIG:	Geoprobe	DRILLER:	Nathan Ferree

[illegible]

Remarks: Hand auger boring on slope northwest of building 36

Converted to Well:	Yes	No	X	Well I.D. #:
--------------------	-----	----	---	--------------

**PROJECT NAME:**

NSA Crane - SWMU 23

**BORING No.:**

5B039

**PROJECT NUMBER:**

112IG06018

DATE:

MARCH 28 2014

**DRILLING COMPANY:**

Chase

**GEOLOGIST:**

**J. Ferguson**

**DRILLING RIG:**

## Geoprobe

**DRILLER:**

**Nathan Ferree**

[illegible]**Remarks:**

Hand Auger boring on slope north west of building 36

**Converted to Well:**

**Yes**

**No**

x

Well I.D. #:

PROJECT NAME:	NSA Crane - SWMU 23	BORING No.:	3B04D
PROJECT NUMBER:	112IG06018	DATE:	MARCH 28, 2014
DRILLING COMPANY:	Chase	GEOLOGIST:	J. Ferguson
DRILLING RIG:	Geoprobe	DRILLER:	Nathan Ferree

[illegible]

Remarks: Hand auger boring on slope northwest of Building 36.

Converted to Well:	Yes	No	X	Well I.D. #:
--------------------	-----	----	---	--------------

**PROJECT NAME:**

NSA Crane - SWMU 23

**BORING No.:**

58 041

**PROJECT NUMBER:**

112IG06018

**DATE:**

MARCH 28, 2014

**DRILLING COMPANY:**

Chase

**GEOLOGIST:**

J. Ferguson

**DRILLING RIG:**

## Geoprobe

**DRILLER:**

**Nathan Ferree**

[illegible]**Remarks:**

Hand auger boring on slope northwest of Bldg 36

### Converted to Well:

**Yes**

**No**

Well I.D. #:

PROJECT NAME:	NSA Crane - SWMU 23	BORING No.:	58042
PROJECT NUMBER:	112IG06018	DATE:	MARCH 28, 2014
DRILLING COMPANY:	Chase	GEOLOGIST:	J. Ferguson
DRILLING RIG:	Geoprobe	DRILLER:	Nathan Ferree

[illegible]

Remarks: Hard map being on scope northwest of Buldy 36

Converted to Well:	Yes	No	<input checked="" type="checkbox"/>	Well I.D. #:
--------------------	-----	----	-------------------------------------	--------------

PROJECT NAME:	NSA Crane - SWMU 23	BORING No.:	SB 043
PROJECT NUMBER:	112IG06018	DATE:	MARCH 28,
DRILLING COMPANY:	Chase	GEOLOGIST:	J. Ferguson
DRILLING RIG:	Geoprobe	DRILLER:	Nathan Ferree

[illegible]

Remarks: Hand seen boy on slope Northwest of Bu 14 36

Converted to Well:	Yes	No	<input checked="" type="checkbox"/>	Well I.D. #:
--------------------	-----	----	-------------------------------------	--------------



**PROJECT NAME:**

NSA Crane - SWMU 23

**BORING No.:**

TR 844

**PROJECT NUMBER:**

112IG06018

DATE:

March 28, 2014

**DRILLING COMPANY:**

Chase

**GEOLOGIST:**

J. Ferguson

**DRILLING RIG:**

## Geoprobe

**DRILLER:**

**Nathan Ferree**

[illegible]**Remarks:**

Shoal margin bay on slope northeast of Buily 36.

**Converted to Well:**

**Yes**

**No**

**X**

Well I.D. #:



**PROJECT NAME:**

NSA Crane - SWMU 23

**BORING No.:** \_\_\_\_\_

SB 045

**PROJECT NUMBER:**

112IG06018

**DATE:** \_\_\_\_\_

MARCH 28, 2014

**DRILLING COMPANY:**

## Chase

**GEOLOGIST:**

J. Ferguson

**DRILLING RIG:**

## Geoprobe

**DRILLER:**

Nathan Ferree

[illegible]

Remarks: band silver band on slope north west of Bully 36

**Converted to Well:**

**Yes**

**No**

x

Well I.D. #:

**PROJECT NAME:**

NSA Crane - SWMU 23

**BORING No.:**

5B-046

**PROJECT NUMBER:**

112IG06018

**DATE:**

MARCH 22, 2014

**DRILLING COMPANY:**

Chase

**GEOLOGIST:**

J. Ferguson

**DRILLING RIG:**

## Geoprobe

**DRILLER:**

## Nathan Ferree

[illegible]

Remarks:

Hand auger boring on slope northeast of Building 36

**Converted to Well:**

**Yes**

**No**

Well I.D. #:

**PROJECT NAME:**

**NSA Crane - SWMU 23**

**BORING No.:** \_\_\_\_\_

5B04.7

**PROJECT NUMBER:**

112IG06018

DATE: \_\_\_\_\_

MARCH 28, 2014

**DRILLING COMPANY:**

## Chase

**GEOLOGIST:**

J. Ferguson

**DRILLING RIG:**

## Geoprobe

**DRILLER:**

---

**Nathan Ferree**

[illegible]**Remarks:**

Island was bearing on 300° northwest of Buoy 36

### Converted to Well:

**Yes**

**No**

X

Well I.D. #:

## BORING LOG

PROJECT NAME: NSA CRANE  
PROJECT NUMBER: 112G03539  
DRILLING COMPANY: TRIECO  
DRILLING RIG: DPT 54 DT

BORING No.: 23SB027  
DATE: 5/18/13  
GEOLOGIST: CONTI  
DRILLER: D. SAMSEL

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm):

Converted to Well: Yes No ☒ Well I.D. #: NA

Page 1 of 1

BORING No.: 23SB028  
DATE: 5/18/13  
GEOLOGIST: CONTI  
DRILLER: D SAMSEL

[illegible]

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area  
Background (ppm):

Converted to Well: Yes No ☒ Well I.D. #: NA

## BORING LOG

PROJECT NAME: NSA CRANE  
PROJECT NUMBER: U2G03539  
DRILLING COMPANY: TRI ECO  
DRILLING RIG: DPT 54 DT

BORING No.: 23SBO29  
DATE: 5/18/13  
GEOLOGIST: CONTI  
DRILLER: D SAMSEL

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm): 6

Converted to Well: Yes No ☒ Well I.D. #: N/A



TETRA TECH, INC.

CHAIN OF CUSTODY

NUMBER 032014-XXX

PAGE 1 OF 1

PROJECT NO: 112IG06018		FACILITY: NSA Crane - SWMU 23		PROJECT MANAGER Ralph Basinski		PHONE NUMBER 412-921-8524		LABORATORY NAME AND CONTACT: TestAmerica, Inc. / Michele Kersey 912-354-7858 (ext. 3312)							
SAMPLERS (SIGNATURE)  <i>K. W. L.</i>				FIELD OPERATIONS LEADER Jim Ferguson		PHONE NUMBER 412-921-7090		ADDRESS 5102 LaRoche Avenue							
				CARRIER/WAYBILL NUMBER Fed Ex /				CITY, STATE Savannah, GA 31404							
STANDARD TAT <input checked="" type="checkbox"/> <del>RUSH TAT</del> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input checked="" type="checkbox"/> 7 day <input type="checkbox"/> 14 day				TOP DEPTH (feet)	BOTTOM DEPTH (feet)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	Container Type Plastic (P) or Glass (G)	g	g				COMMENTS
Preservative Used	4°C	4°C													
DATE YEAR: 2014	TIME	SAMPLE ID	LOCATION ID						TYPE OF ANALYSIS	Pb	PAHs				
3/21	0930	23SS062-0002	SB062	0	2	SO	C	1			1				Analyze
3/21	1155	23SS064-0002	SB064	0	2	SO	C	1			1				Hold
3/21	1200	23SB064-0204	SB064	2	4	SO	C	1			1				Hold
3/21	1205	23SB064-0406	SB064	4	6	SO	C	1			1				Hold
3/21	1215	23SS065-0002	SB065	0	2	SO	C	1			1				Analyze
3/21	1230	23SS066-0002	SB066	0	2	SO	C	1			1				Hold
3/21	1235	23SB066-0204	SB066	2	4	SO	C	1			1				Hold
3/21	1240	23SB066-0406	SB066	4	6	SO	C	1			1				Hold
3/21	1300	23SS067-0002	SB067	0	2	SO	C	1			1				Analyze
3/21	1305	23SB067-0204	SB067	2	4	SO	C	1			1				Analyze
3/21	1310	23SB067-0406	SB067	4	6	SO	C	1			1				Hold
3/21	1330	23SS068-0002	SB068	0	2	SO	C	1			1				Hold
3/21	1335	23SB068-0204	SB068	2	4	SO	C	1			1				Hold

680-98753 Chain of Custody

680-99753  
2.6/5.6°C

1. RELINQUISHED BY <i>K. W. L.</i>	DATE 3/24/14	TIME 1345	1. RECEIVED BY <i>M. Kersey</i>	DATE 03/23/14	TIME 0937
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENT Hold = Hold Sample until notified by Tetra Tech - Do not extract. Analyze = Analyze sample within designated TAT.





TETRA TECH, INC.

## CHAIN OF CUSTODY

NUMBER 032014-XXX

PAGE 1 OF 1

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PROJECT NO: 112IG06018		FACILITY: NSA Crane - SWMU 23		PROJECT MANAGER Ralph Basinski		PHONE NUMBER 412-921-8524		LABORATORY NAME AND CONTACT: TestAmerica, Inc. / Michele Kersey 912-354-7858 (ext. 3312)								
SAMPLERS (SIGNATURE)  <i>K. Wilt</i>				FIELD OPERATIONS LEADER Jim Ferguson		PHONE NUMBER 412-921-7090		ADDRESS 5102 LaRoche Avenue								
				CARRIER/WAYBILL NUMBER Fed Ex /				CITY, STATE Savannah, GA 31404								
STANDARD TAT <input type="checkbox"/> RUSH TAT <input checked="" type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input checked="" type="checkbox"/> 7 day <input type="checkbox"/> 14 day								Container Type Plastic (P) or Glass (G)		G	G					COMMENTS
						Preservative Used		4°C	4°C							
DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (feet)	BOTTOM DEPTH (feet)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (g) COMP (C)	NO. OF CONTAINERS	TYPE OF ANALYSIS	Pb	PAHs					
3/21	1140	23SS049-0002	SB049	0	2	SO	C	1			1				Hold	
3/21	1130	23SS050-0002	SB050	0	2	SO	C	1			1				Analyze	
3/21	1120	23SS051-0002	SB051	0	2	SO	C	1			1				Hold	
3/21	1115	23SS052-0002	SB052	0	2	SO	C	1			1				Hold	
3/21	1055	23SS053-0002	SB053	0	2	SO	C	1			1				Analyze	
3/21	1045	23SS054-0002	SB054	0	2	SO	C	1			1				Hold	
3/21	1035	23SS055-0002	SB055	0	2	SO	C	1			1				Hold	
3/21	1025	23SS056-0002	SB056	0	2	SO	C	1			1				Analyze	
3/21	1015	23SS057-0002	SB057	0	2	SO	C	1			1				Hold	
3/21	1010	23SS058-0002	SB058	0	2	SO	C	1			1				Analyze	
3/21	1005	23SS059-0002	SB059	0	2	SO	C	1			1				Analyze	
3/21	0955	23SS060-0002	SB060	0	2	SO	C	1			1			680-99753	Hold	
3/21	0945	23SS061-0002	SB061	0	2	SO	C	1			1			2.615.6°C	Hold	
1. RELINQUISHED BY <i>K. Wilt</i>				DATE 3-24-14		TIME		1. RECEIVED BY <i>Mark</i>				DATE 3/25/14		TIME 0937		
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME		
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY				DATE		TIME		
COMMENTS Hold = Hold Sample until notified by Tetra Tech - Do not extract. Analyze = Analyze sample within designated TAT.																





## CHAIN OF CUSTODY

**NUMBER** 032014-XXX

**PAGE 1 OF 1**

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[illegible]

[illegible]

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RA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER **Nº 2852**PAGE **2** OF **3**

PROV

PROJECT NO: <b>112 IG 06018</b>		FACILITY: <b>NSA CRANE SWM 23</b>		PROJECT MANAGER <b>R BASINSKI</b>		PHONE NUMBER <b>412-921-8524</b>		LABORATORY NAME AND CONTACT: <b>TEST AMERICA, MICHELLE KOSSEY</b>							
SAMPLERS (SIGNATURE)				FIELD OPERATIONS LEADER <b>J FERGUSON</b>		PHONE NUMBER <b>412-921-7090</b>		ADDRESS <b>5102 LAROCHE AVE</b>							
				CARRIER/WAYBILL NUMBER <b>FED EX 1771-8058-0</b>		CITY, STATE <b>SAVANNAH, GA 31404</b>									
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input checked="" type="checkbox"/> 7 day <input type="checkbox"/> 14 day				CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS <b>PAH</b> <b>PCB</b>				COMMENTS			
DATE YEAR <b>2014</b>	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS							
3/26	15:40	<b>23SB0750406</b>	<b>SB 75</b>	4	6	SO	G	1	X	—					<b>HOLD</b>
3/26	15:40	<b>23SB0750204</b>	<b>SB 75</b>	2	4	SO	G	1	X	—					<b>HOLD</b>
3/26	15:44	<b>23SB0740406</b>	<b>SB 74</b>	4	6	SG	G	1	X	—					<b>HOLD</b>
3/26	15:44	<b>23SB0740002</b>	<b>SB 74</b>	0	2	SO	G	1	X	—					
3/26	15:44	<b>23SB0740204</b>	<b>SB 74</b>	2	4	SO	G	1	X	—					
3/26	15:44	<del><b>23SB0740406</b></del>	<del><b>SB 74</b></del>	<del>4</del>	<del>6</del>	<del>SO</del>	<del>G</del>	<del>1</del>	<del>X</del>	<del>—</del>					
1. RELINQUISHED BY <b>[Signature]</b> DATE <b>3/27/14</b> TIME <b>10:15</b> 1. RECEIVED BY <b>[Signature]</b> <b>8043 3353 9869</b> DATE TIME															
2. RELINQUISHED BY DATE TIME 2. RECEIVED BY DATE TIME															
3. RELINQUISHED BY DATE TIME 3. RECEIVED BY <b>[Signature]</b> DATE <b>03/23/14</b> TIME <b>10:15</b>															
COMMENTS															

1.4°C 680-99823

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TECHNUS, INC.

CHAIN OF CUSTODY

NUMBER

No 2373

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PROV

PROJECT NO: <b>112IG06017</b>		FACILITY: <b>NSA Crane SUMU23</b>		PROJECT MANAGER <b>R Basinski</b>		PHONE NUMBER <b>412-921-8524</b>		LABORATORY NAME AND CONTACT: <b>Test America</b>							
SAMPLERS (SIGNATURE) 				FIELD OPERATIONS LEADER <b>J Ferguson</b>		PHONE NUMBER <b>412-921-7090</b>		ADDRESS <b>5102 LaRache Ave</b>							
				CARRIER/WAYBILL NUMBER <b>RedX 1771-8058-0</b>		CITY, STATE <b>SAVANNAH, GA 31404</b>									
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input checked="" type="checkbox"/> 7 day <input type="checkbox"/> 14 day						CONTAINER TYPE PLASTIC (P) or GLASS (G)									
				PRESERVATIVE USED											
DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS PAH PCB				COMMENTS		
3/26	15:30	23SS0480002	SB 48	0	2	SO	G	1	x	-					
	16:19	23SB0630406	SB 63	4	6	SO	G	1	x	-			HOLD		
	16:17	23SB0030406	SB 03	4	6	SO	G	1	x	-			HOLD		
	16:24	23SB0020406	SB 02	4	6	SO	G	1	x	-			HOLD		
	15:59	23SS0720002	SB 72	0	2	SO	G	1	x	-			HOLD		
	15:59	23SB0720204	SB 72	2	4	SO	G	1	x	-			HOLD		
	15:59	23SB0720406	SB 72	4	6	SO	G	1	x	-			HOLD		
	16:09	23SB0710406	SB 71	4	6	SO	G	1	x	-			HOLD		
	16:34	23SS0700002	SB 70	0	2	SO	G	1	x	-			HOLD		
	16:34	23SB0700204	SB 70	2	4	SO	G	1	x	-			HOLD		
	16:34	23SB0700406	SB 70	4	6	SO	G	1	x	-			HOLD		
	16:29	23SB0690406	SB 69	4	6	SO	G	1	x	-			HOLD		
	15:40	23SS0750002	SB 75	0	2	SO	G	1	x	-			HOLD		
1. RELINQUISHED BY				DATE <b>3/27/14</b>		TIME <b>1045</b>		1. RECEIVED BY <b>FEDER AD # 8043 3353 9801</b>				DATE		TIME	
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME	
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY				DATE		TIME	
COMMENTS															

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680-99883

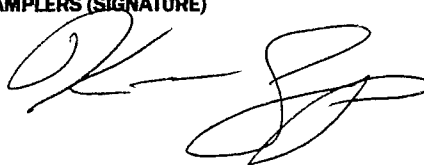


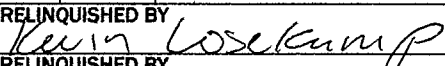
TETRA TECH, INC.

CHAIN OF CUSTODY

NUMBER 100112-06

PAGE 1 OF 1

PROJECT NO: 112G03539		FACILITY: NSA Crane - SWMU 23		PROJECT MANAGER Jim Goerd		PHONE NUMBER 412-921-8425		LABORATORY NAME AND CONTACT: Empirical Labs / Brian Richard (615-345-1115)								
SAMPLERS (SIGNATURE) 				FIELD OPERATIONS LEADER Jim Goerd		PHONE NUMBER 412-921-8425		ADDRESS 621 Mainstream Drive, Suite 270								
				CARRIER/WAYBILL NUMBER Fed Ex / 8013 8269 0950				CITY, STATE Nashville, TN 37228								
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				TOP DEPTH (INCHES)	BOTTOM DEPTH (INCHES)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	Container Type Plastic (P) or Glass (G)	G	G	G	G	G	G	COMMENTS
									Preservative Used	6°C / CH4O/ NaSH 04	6°C	6°C	6°C / CH4O	6°C	6°C / HCL	
DATE YEAR: 2012	TIME	SAMPLE ID	LOCATION ID						TYPE OF ANALYSIS	VOCs	Metals/TOC	PAHs/PCBs	TPH (GRO)	TPH (DRO/ERO)	VOCs	
10/8	900	23SD001-0006	001	0	6	SD	G	15		9	3	3				MS/MSD
10/8	1050	23SD002-0006	002	0	6	SD	G	5		3	1	1				
10/8	1110	23SD003-0006	003	0	6	SD	G	5		3	1	1				
10/8	1345	23SD004-0006	004	0	6	SD	G	5		3	1	1				
10/8	1330	23SD005-0006	005	0	6	SD	G	5		3	1	1				
10/8	1320	23SD006-0006	006	0	6	SD	G	5		3	1	1				
10/8	1400	23SD008-0006	008	0	6	SD	G	7		3	1	1	1	1		
10/8	0000	23FD100812-04	QC	-	-	QC	G	5		3	1	1				23SD001-0006
10/8	1700	23RB100812-01	QC	-	-	QC	G	11		3	2	2	2	2		
10/8	1730	23TB100812-01	QC	-	-	QC	G	2							2	

1. RELINQUISHED BY 	DATE 10/9/12	TIME 1600	1. RECEIVED BY	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					





## CHAIN OF CUSTODY

NUMBER

042014 -001

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PROJECT NO: 112IG06018		FACILITY: NSA Crane - SWMU 23		PROJECT MANAGER Ralph Basinski		PHONE NUMBER 412-921-8308		LABORATORY NAME AND CONTACT: TestAmerica, Inc. / Michele Kersey 912-354-7858 (ext. 3312)									
SAMPLERS (SIGNATURE) 				FIELD OPERATIONS LEADER Jim Goerd		PHONE NUMBER 412-443-0244		ADDRESS 5102 LaRoche Avenue									
				CARRIER/WAYBILL NUMBER Fed Ex / 8043 3353 9940				CITY, STATE Savannah, GA 31404									
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/> 10 Day TAT <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				TOP DEPTH (feet)	BOTTOM DEPTH (feet)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	Container Type Plastic (P) or Glass (G)	G	G					COMMENTS	
DATE YEAR: 2014	TIME	SAMPLE ID	LOCATION ID						TYPE OF ANALYSIS	Pb	PAHs						
4/17	1625	23SS076-0002	076	0	2	SO	G	1		1							
4/17	1625	23SB076-0203	076	2	3	SO	G	1		1							
4/17	1645	23SS077-0002	077	0	2	SO	G	3		3						MS/MSD	
4/17	1700	23SS078-0001	078	0	1	SO	G	1		1							
4/17	1650	23SS079-0002	079	0	2	SO	G	1		1							
4/17	1640	23SS080-0002	080	0	2	SO	G	1		1							
4/17	1710	23SS081-0001	081	0	1	SO	G	1		1							
4/17	0000	23FD041714-01	QC	—	—	SO	G	1		1							
1. RELINQUISHED BY 				DATE 4/18/14	TIME 1330	1. RECEIVED BY				DATE				TIME			
2. RELINQUISHED BY				DATE	TIME	2. RECEIVED BY				DATE				TIME			
3. RELINQUISHED BY				DATE	TIME	3. RECEIVED BY				DATE				TIME			
COMMENTS:																	



TETRA TECH, INC.

CHAIN OF CUSTODY

NUMBER 102212-01

PAGE 1 OF 2

PROJECT NO: 112G03539		FACILITY: NSA Crane - SWMU 23		PROJECT MANAGER Jim Goerdts		PHONE NUMBER 412-921-8425		LABORATORY NAME AND CONTACT: Empirical Labs / Brian Richard (615-345-1115)									
SAMPLERS (SIGNATURE)				FIELD OPERATIONS LEADER Kevin Losekamp		PHONE NUMBER 513-333-3680		ADDRESS 621 Mainstream Drive, Suite 270									
				CARRIER/WAYBILL NUMBER Fed Ex / 8013 8269 1041						CITY, STATE Nashville, TN 37228							
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day								Container Type Plastic (P) or Glass (G)		G	G	G	G	G	COMMENTS		
						Preservative Used		6°C /H2O/ CH4O	6°C	6°C	6°C / CH4O	6°C					
						TYPE OF ANALYSIS		VOCs	Metals/Sulfate/pH	PAHs/PCBs	TPH (GRO)	TPH (DRO/ERO)					
DATE YEAR: 2012	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS									
11/01	1015	23SS007-0002	007	0	2	SO	G	7		3	1	1	1	1			
11/01	1230	23SS008-0002	008	0	2	SO	G	7		3	1	1	1	1			
11/01	1300	23SS009-0002	009	0	2	SO	G	7		3	1	1	1	1			
11/01	1330	23SS010-0002	010	0	2	SO	G	7		3	1	1	1	1			
11/01	1415	23SS011-0002	011	0	2	SO	G	7		3	1	1	1	1			
11/01	1430	23SS012-0002	012	0	2	SO	G	7		3	1	1	1	1			
11/01	1500	23SS013-0002	013	0	2	SO	G	7		3	1	1	1	1			
10/31	1615	23SS014-0002	014	0	2	SO	G	7		3	1	1	1	1			
10/31	1600	23SS015-0002	015	0	2	SO	G	7		3	1	1	1	1			
10/31	1630	23SS016-0002	016	0	2	SO	G	7		3	1	1	1	1			
10/31	1645	23SS017-0002	017	0	2	SO	G	7		3	1	1	1	1			
11/01	1030	23SS018-0002	018	0	2	SO	G	7		3	1	1	1	1			
11/01	1215	23SS019-0002	019	0	2	SO	G	7		3	1	1	1	1			
1. RELINQUISHED BY Kevin Losekamp				DATE 11/01/12		TIME 1800		1. RECEIVED BY						DATE		TIME	
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY						DATE		TIME	
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY						DATE		TIME	
COMMENTS																	



TETRA TECH, INC.

CHAIN OF CUSTODY

NUMBER 102212-02

PAGE 2\_ OF 2\_

PROJECT NO: 112G03539		FACILITY: NSA Crane - SWMU 23		PROJECT MANAGER Jim Goerd		PHONE NUMBER 412-921-8425		LABORATORY NAME AND CONTACT: Empirical Labs / Brian Richard (615-345-1115)								
SAMPLERS (SIGNATURE)				FIELD OPERATIONS LEADER Kevin Losekamp		PHONE NUMBER 513-333-3680		ADDRESS 621 Mainstream Drive, Suite 270								
				CARRIER/WAYBILL NUMBER Fed Ex / 8013 8269 1041						CITY, STATE Nashville, TN 37228						
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	Container Type Plastic (P) or Glass (G)	G	G	G	G	G		COMMENTS
Preservative Used	6°C /CH4O /H2O	6°C	6°C						6°C /CH4O	6°C	6°C/ HCL					
DATE YEAR: 2012	TIME	SAMPLE ID	LOCATION ID						TYPE OF ANALYSIS	VOCs	Metals/Sulfate/pH	PAHs/PCBs	TPH (GRO)	TPH (DRO/ERO)	VOCs	
11/01	1130	23SS020-0002	020	0	2	SO	G	7		3	1	1	1	1		
11/01	1200	23SS021-0002	021	0	2	SO	G	7		3	1	1	1	1		
11/01	1530	23SS022-0002	022	0	2	SO	G	7		3	1	1	1	1		
11/01	1600	23SS023-0002	023	0	2	SO	G	7		3	1	1	1	1		
11/01	1630	23TB110112-01	Trip Blank	QC	QC	QC	G	2							2	
1. RELINQUISHED BY Kevin Losekamp				DATE 11/01/12		TIME 1800		1. RECEIVED BY				DATE		TIME		
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME		
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY				DATE		TIME		
COMMENTS																




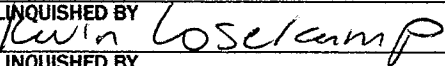


TETRA TECH, INC.

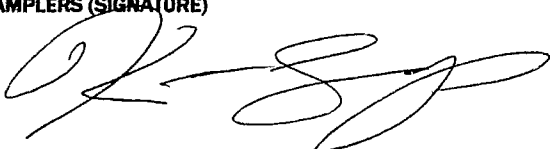
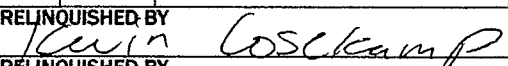
CHAIN OF CUSTODY

NUMBER 100112-01

PAGE 1 OF 2

PROJECT NO: 112G03539		FACILITY: NSA Crane - SWMU 23		PROJECT MANAGER Jim Goerd		PHONE NUMBER 412-921-8425		LABORATORY NAME AND CONTACT: Empirical Labs / Brian Richard (615-345-1115)							
SAMPLERS (SIGNATURE) 				FIELD OPERATIONS LEADER Jim Goerd		PHONE NUMBER 412-921-8425		ADDRESS 621 Mainstream Drive, Suite 270							
				CARRIER/WAYBILL NUMBER Fed Ex / 8013 8269 0950				CITY, STATE Nashville, TN 37228							
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	Container Type Plastic (P) or Glass (G)	G	G	G	G	G	COMMENTS
TYPE OF ANALYSIS	Preservative Used	6°C / CH40/ NaSH 04	6°C						6°C	6°C / CH40	6°C				
DATE YEAR: 2012	TIME	SAMPLE ID	LOCATION ID						VOCs	Metals/Sulfate/pH	PAHs/PCBs	TPH (GRO)	TPH (DRO/ERO)		
10/7	915	23SS001-0002	001	0	2	SO	G	7		3	1	1	1	1	
10/7	930	23SB001-1012	001	10	12	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only (2) PAHs only
10/7	945	23SS002-0002	002	0	2	SO	G	21		9	3	3	3	3	MS/MSD
10/7	1000	23SB002-1012	002	10	12	SO	G	21 <sup>(1)</sup> (2)		9	3 <sup>(1)</sup>	3 <sup>(2)</sup>	3	3	(1) Metals Only MS/MSD (2) PAHs only
10/7	1015	23SS003-0002	003	0	2	SO	G	7		3	1	1	1	1	
10/7	1025	23SB003-0810	003	8	10	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only (2) PAHs only
10/7	1350	23SS004-0002	004	0	2	SO	G	7		3	1	1	1	1	
10/7	1405	23SB004-0810	004	8	10	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only (2) PAHs only
10/7	1415	23SS005-0002	005	0	2	SO	G	7		3	1	1	1	1	
10/7	1435	23SB005-0810	005	8	10	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only (2) PAHs only
10/7	1455	23SS006-0002	006	0	2	SO	G	7		3	1	1	1	1	
10/7	1510	23SB006-0608	006	6	8	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only (2) PAHs only
								112							
1. RELINQUISHED BY 				DATE 10/8/12		TIME 1600		1. RECEIVED BY				DATE		TIME	
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME	
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY				DATE		TIME	
COMMENTS															



PROJECT NO: 112G03539		FACILITY: NSA Crane - SWMU 23		PROJECT MANAGER Jim Goerdts		PHONE NUMBER 412-921-8425		LABORATORY NAME AND CONTACT: Empirical Labs / Brian Richard (615-345-1115)							
SAMPLERS (SIGNATURE) 				FIELD OPERATIONS LEADER Jim Goerdts		PHONE NUMBER 412-921-8425		ADDRESS 621 Mainstream Drive, Suite 270							
				CARRIER/WAYBILL NUMBER Fed Ex / 8013 8269 0950						CITY, STATE Nashville, TN 37228					
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	Container Type Plastic (P) or Glass (G)	G	G	G	G	G	COMMENTS
Preservative Used	6°C / CH4O/ NaSH 04	6°C	6°C						6°C / CH4O	6°C					
DATE YEAR: 2012	TIME	SAMPLE ID	LOCATION ID						TYPE OF ANALYSIS	VOCs	Metals/Sulfate/pH	PAHs/PCBs	TPH (GRO)	TPH (DRO/ERO)	
10/7	1550	23SB024-0406	024	4	6	SO	G	7		3	1	1	1	1	
10/7	1600	23SB024-0608	024	6	8	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only (2) PAHs only
10/7	1540	23SB025-0406	025	4	6	SO	G	7		3	1	1	1	1	
10/7	1545	23SB025-0608	025	6	8	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only (2) PAHs only
10/7	1030	23SB026-0406	026	4	6	SO	G	21		7	3	3	3	3	MS/MSD
10/7	1035	23SB026-0608	026	6	8	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only (2) PAHs only
10/7	0000	23FD100712-01	QC	-	-	SO	G	7		3	1	1	1	1	23SS001-0002
10/7	0000	23FD100712-02	QC	-	-	SO	G	7 <sup>(1)</sup> (2)		3	1 <sup>(1)</sup>	1 <sup>(2)</sup>	1	1	(1) Metals Only 23SB001 (2) PAHs only 0102
10/7	0000	23FD100712-03	QC	-	-	SO	G	7		3	1	1	1	1	23SS003-0002
1. RELINQUISHED BY 				DATE 10/8/12		TIME 1600		1. RECEIVED BY				DATE		TIME	
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME	
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY				DATE		TIME	
COMMENTS															

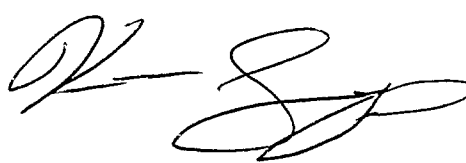
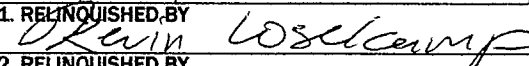


TETRA TECH, INC.

CHAIN OF CUSTODY

NUMBER 100112-07

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PROJECT NO: 112G03539				FACILITY: NSA Crane - SWMU 23				PROJECT MANAGER Jim Goerd				PHONE NUMBER 412-921-8425				LABORATORY NAME AND CONTACT: Empirical Labs / Brian Richard (615-345-1115)			
SAMPLERS (SIGNATURE) 				FIELD OPERATIONS LEADER Jim Goerd				PHONE NUMBER 412-921-8425				ADDRESS 621 Mainstream Drive, Suite 270							
				CARRIER/WAYBILL NUMBER Fed Ex / 8013 8269 0950				CITY, STATE Nashville, TN 37228											
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day								Container Type Plastic (P) or Glass (G)				G	G	G	G	G	G	COMMENTS	
								Preservative Used				6°C HNO3	6°C HNO3	6°C					
DATE YEAR: 2012	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (INCHES)	BOTTOM DEPTH (INCHES)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS	Metals/Hardness	Metals -Dissolved	PAHs							
10/8	905	23SW001	001	-	-	SW	G	9		3		6				MS/MSD			
10/8	905	23SW001-F	001	-	-	SW	G	3			3					MS/MSD			
10/8	1050	23SW002	002	-	-	SW	G	3		1		2							
10/8	1050	23SW002-F	002	-	-	SW	G	1			1								
10/8	1110	23SW003	003	-	-	SW	G	3		1		2							
10/8	1110	23SW003-F	003	-	-	SW	G	1			1								
10/8	1345	23SW004	004	-	-	SW	G	3		1		2							
10/8	1345	23SW004-F	004	-	-	SW	G	1			1								
10/8	1330	23SW005	005	-	-	SW	G	3		1		2							
10/8	1330	23SW005-F	005	-	-	SW	G	1			1								
10/8	1320	23SW006	006	-	-	SW	G	3		1		2							
10/8	1320	23SW006-F	006	-	-	SW	G	1			1								
10/8	0000	23FD100812-05	QC	-	-	QC	G	4		1	1	2				23 SW 001			
1. RELINQUISHED BY 				DATE 10/8/12		TIME 1600		1. RECEIVED BY				DATE		TIME					
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME					
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY				DATE		TIME					
COMMENTS																			



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<b>PROJECT NO:</b> 112IG06018		<b>FACILITY:</b> NSA Crane - SWMU 23		<b>PROJECT MANAGER</b> Ralph Basinski		<b>PHONE NUMBER</b> 412-921-8308		<b>LABORATORY NAME AND CONTACT:</b> TestAmerica, Inc. / Michele Kersey 912-354-7858 (ext. 3312)								
<b>SAMPLERS (SIGNATURE)</b>				<b>FIELD OPERATIONS LEADER</b> Jim Goerdtt		<b>PHONE NUMBER</b> 412-443-0244		<b>ADDRESS</b> 5102 LaRoche Avenue								
				<b>CARRIER/WAYBILL NUMBER</b> Fed Ex / 8011 1642 8130				<b>CITY, STATE</b> Savannah, GA 31404								
				<b>TOP DEPTH (feet)</b>	<b>BOTTOM DEPTH (feet)</b>	<b>MATRIX (GW, SO, SW, SD, QC, ETC.)</b>	<b>COLLECTION METHOD GRAP (G) COMP (C)</b>	<b>No. OF CONTAINERS</b>	<b>Container Type Plastic (P) or Glass (G)</b>	<b>G</b>	<b>G</b>					<b>COMMENTS</b>
<b>Preservative Used</b>	<b>4°C</b>	<b>4°C</b>														
<b>DATE YEAR: 2014</b>	<b>TIME</b>	<b>SAMPLE ID</b>	<b>LOCATION ID</b>													
5/23	1100	23SB001-0204	001	2	4	SO	G	1			1					
5/23	1102	23SB001-0406	001	4	6	SO	G	1			1					
5/23	1020	23SB004-0204	004	2	4	SO	G	3			3					MS/MSD
5/23	1022	23SB004-0406	004	4	6	SO	G	1			1					
5/23	1012	23SB048-0204	048	2	4	SO	G	1			1					
5/23	1014	23SB048-0406	048	4	6	SO	G	1			1					
5/23	1110	23SB059-0204	059	2	4	SO	G	1			1					
5/23	1030	23SB073-0204	073	2	4	SO	G	1			1					
5/23	1032	23SB073-0406	073	4	6	SO	G	1			1					
5/23	1210	23SS082-0002	082	0	2	SO	G	1		1						
1. RELINQUISHED BY				DATE		TIME		1. RECEIVED BY				DATE		TIME		
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME		
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY				DATE		TIME		
COMMENTS																



## CHAIN OF CUSTODY

**NUMBER** 052014 -002

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<b>PROJECT NO:</b> 112IG06018				<b>FACILITY:</b> NSA Crane - SWMU 23				<b>PROJECT MANAGER</b> Ralph Basinski				<b>PHONE NUMBER</b> 412-921-8308				<b>LABORATORY NAME AND CONTACT:</b> TestAmerica, Inc. / Michele Kersey 912-354-7858 (ext. 3312)																	
<b>SAMPLERS (SIGNATURE)</b>								<b>FIELD OPERATIONS LEADER</b> Jim Goerdts				<b>PHONE NUMBER</b> 412-443-0244				<b>ADDRESS</b> 5102 LaRoche Avenue																	
								<b>CARRIER/WAYBILL NUMBER</b> Fed Ex / 8011 1642 8130								<b>CITY, STATE</b> Savannah, GA 31404																	
								<b>TOP DEPTH (feet)</b>		<b>BOTTOM DEPTH (feet)</b>		<b>MATRIX (GW, SO, SW, SD, QC, ETC.)</b>		<b>COLLECTION METHOD GRAP (G) COMP (C)</b>		<b>No. OF CONTAINERS</b>		<b>Container Type Plastic (P) or Glass (G)</b>		<b>G</b>		<b>G</b>										<b>COMMENTS</b>	
<b>Preservative Used</b>		<b>4°C</b>		<b>4°C</b>																													
<b>DATE YEAR: 2014</b>		<b>TIME</b>		<b>SAMPLE ID</b>				<b>LOCATION ID</b>																									
5/23		1000		23SS083-0002				083		0		2		SO		G		1				1											
5/23		1002		23SB083-0204				083		2		4		SO		G		1				1											
5/23		1004		23SB083-0406				083		4		6		SO		G		1				1											
5/23		930		23SS084-0002				084		0		2		SO		G		1				1											
5/23		932		23SB084-0204				084		2		4		SO		G		1				1											
5/23		934		23SB084-0406				084		4		6		SO		G		1				1											
5/23		910		23SS085-0002				085		0		2		SO		G		1				1										HIGH LEAD (XRF)	
5/23		912		23SB085-0204				085		2		4		SO		G		1				1										HIGH LEAD (XRF)	
5/23		914		23SB085-0406				085		4		6		SO		G		1				1											
5/23		950		23SS086-0002				086		0		2		SO		G		1				1											
5/23		952		23SB086-0204				086		2		4		SO		G		3				3										MS/MSD	
5/23		954		23SB086-0406				086		4		6		SO		G		1				1											
5/23		940		23SS087-0002				087		0		2		SO		G		1				1										HIGH LEAD (XRF)	
1. RELINQUISHED BY								DATE				TIME				1. RECEIVED BY								DATE				TIME					
2. RELINQUISHED BY								DATE				TIME				2. RECEIVED BY								DATE				TIME					
3. RELINQUISHED BY								DATE				TIME				3. RECEIVED BY								DATE				TIME					
COMMENTS																																	

<b>PROJECT NO:</b> 112IG06018				<b>FACILITY:</b> NSA Crane - SWMU 23				<b>PROJECT MANAGER</b> Ralph Basinski				<b>PHONE NUMBER</b> 412-921-8308				<b>LABORATORY NAME AND CONTACT:</b> TestAmerica, Inc. / Michele Kersey 912-354-7858 (ext. 3312)															
<b>SAMPLERS (SIGNATURE)</b>								<b>FIELD OPERATIONS LEADER</b> Jim Goerdtt				<b>PHONE NUMBER</b> 412-443-0244				<b>ADDRESS</b> 5102 LaRoche Avenue															
								<b>CARRIER/WAYBILL NUMBER</b> Fed Ex / 8011 1642 8130								<b>CITY, STATE</b> Savannah, GA 31404															
								<b>TOP DEPTH (feet)</b>		<b>BOTTOM DEPTH (feet)</b>		<b>MATRIX (GW, SO, SW, SD, QC, ETC.)</b>		<b>COLLECTION METHOD GRAP (G) COMP (C)</b>		<b>No. OF CONTAINERS</b>		<b>Container Type Plastic (P) or Glass (G)</b>		<b>G</b>		<b>G</b>									
<b>Preservative Used</b>		<b>4°C</b>		<b>4°C</b>																											
<b>DATE YEAR: 2014</b>		<b>TIME</b>		<b>SAMPLE ID</b>				<b>LOCATION ID</b>		<b>TYPE OF ANALYSIS</b>		<b>Pb</b>		<b>PAHs</b>																	
5/23		942		23SB087-0204				087		2		4		SO		G		3		3						MS/MSD					
5/23		944		23SB087-0406				087		4		6		SO		G		1		1											
5/23		920		23SS088-0002				088		0		2		SO		G		3		3						MS/MSD					
5/23		922		23SB088-0204				088		2		4		SO		G		1		1											
5/23		924		23SB088-0406				088		4		6		SO		G		1		1											
5/23		900		23SS089-0002				089		0		2		SO		G		1		1											
5/23		902		23SB089-0204				089		2		4		SO		G		1		1											
5/23		904		23SB089-0406				089		4		6		SO		G		1		1											
5/23		1040		23SS090-0002				090		0		2		SO		G		1				1									
5/23		1042		23SB090-0204				090		2		4		SO		G		1				1									
5/23		1044		23SB090-0406				090		4		6		SO		G		1				1									
5/23		1050		23SS091-0002				091		0		2		SO		G		1				1									
5/23		1052		23SB091-0204				091		2		4		SO		G		1				1									
1. RELINQUISHED BY								DATE				TIME				1. RECEIVED BY								DATE				TIME			
2. RELINQUISHED BY								DATE				TIME				2. RECEIVED BY								DATE				TIME			
3. RELINQUISHED BY								DATE				TIME				3. RECEIVED BY								DATE				TIME			
COMMENTS																															



**NUMBER** 052014 -004

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PROJECT NO: 112IG06018				FACILITY: NSA Crane - SWMU 23				PROJECT MANAGER Ralph Basinski				PHONE NUMBER 412-921-8308				LABORATORY NAME AND CONTACT: TestAmerica, Inc. / Michele Kersey 912-354-7858 (ext. 3312)																			
SAMPLERS (SIGNATURE)								FIELD OPERATIONS LEADER Jim Goerdtt				PHONE NUMBER 412-443-0244				ADDRESS 5102 LaRoche Avenue																			
								CARRIER/WAYBILL NUMBER Fed Ex / 8011 1642 8130							CITY, STATE Savannah, GA 31404																				
																Container Type Plastic (P) or Glass (G)		G		G														COMMENTS	
STANDARD TAT <input type="checkbox"/> RUSH TAT <input checked="" type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input checked="" type="checkbox"/> 7 day <input type="checkbox"/> 14 day																Preservative Used		4°C		4°C															
								DATE YEAR: 2014		TIME		SAMPLE ID				LOCATION ID		TOP DEPTH (feet)		BOTTOM DEPTH (feet)		MATRIX (GW, SO, SW, SD, QC, ETC.)		COLLECTION METHOD GRAP (G) COMP (C)		No. OF CONTAINERS		TYPE OF ANALYSIS		Pb		PAHs			
5/23		1054		23SB091-0406				091		4		6		SO		G		1						1											
5/23		1140		23SS092-0002				091		4		6		SO		G		1						1											
5/23		1142		23SB092-0204				091		4		6		SO		G		1						1											
5/23		1144		23SB092-0406				091		4		6		SO		G		1						1											
5/23		0000		23FD052314-01				QC		—		—		SO		G		1				1													
5/23		0000		23FD052314-02				QC		—		—		SO		G		1				1													
5/23		0000		23FD052314-03				QC		—		—		SO		G		1				1													
5/23		0000		23FD052314-04				QC		—		—		SO		G		1						1											
1. RELINQUISHED BY								DATE				TIME				1. RECEIVED BY								DATE				TIME							
2. RELINQUISHED BY								DATE				TIME				2. RECEIVED BY								DATE				TIME							
3. RELINQUISHED BY								DATE				TIME				3. RECEIVED BY								DATE				TIME							
COMMENTS																																			





Project

Swmu 23  
- Battery Shop  
B-36

Clear Vinyl Protective Slipcovers (Item No. 30) are available for this style of notebook. Helps protect your notebook from wear & tear. Contact your dealer or the J. L. Darling Corporation.

JG - Jim Goerdts (FOL)  
KL - Kevin Losekamp (Geo)  
JF - John Floyd (Tech)

\* Work at Summit 23  
being completed in  
conjunction w/ work  
at other sites at  
NSA Crane.

10-6-12

1230 - JG to Summit 23  
to begin layout of  
sample locations  
in the vicinity of  
B-36 and associated  
parking lot, including  
locations SB001-006,  
SB024-026, utilizing  
GPS.

Locations SB001-006  
were all initially  
located over steep hill  
side. All were pulled  
back approx 5-10 feet  
so they were accessible  
by DPT & are now  
located on the very  
edge of the gravel  
parking lot along tree  
line.

- Locations SB024-026 may have been adjusted slightly due to their relative position to existing underground utilities. At most, moved ~ 3-4 feet from proposed location.

- SB024-026 are located just north of B-36 in asphalt.

10-7-12

KL/JF spent the entire day collecting soil samples via DPT at locations SB001-006 and SB024-026.

Strong petroleum-like odor detected in samples at locations SB006 & SB024.

1330 - JG arrives on site to assist w/ the last couple of samples.

1630 - Return samples to field trailer & place in fridge.

1700 - Personnel exit Crane.

10-8-13

0745 - Arrive @ field trailer. KL/JF already on site & in the process of prepping for SW/SD sampling @ Sumu 23.

0830 - KL/JF enroute to Sumu 23.

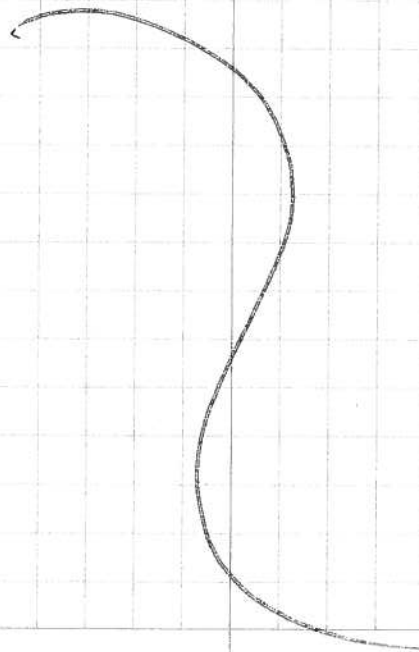
DPT to cold patch asphalt locations  
SBO24-026.

No SW/SD sample collected @ location SW/SD007. This is a very rocky area w/ no sediments & would only carry water during rain events due to its location near the top of the hill.

10-9-13

All samples collected at Sumu 23 shipped to Empirical Labs.

End of Shift



10/29

1200: KL at site to Lay out  
Hand Auger Locations

1545: KL completed Lay out  
of Hand Auger Locations.

1600: Call SG about SB 009  
Headwall missing. He  
Sent pictures of Headwall.

1615: KL located missing headwall  
and updated location.

10/31

1600: KL at site to start collecting  
Surface soil samples at SB 14,  
15, 16, 17. NO Hand <sup>auger</sup> can be  
used due to very shallow bedrock

1730: KL offsite





Nov 1-

0700: KLL Onsite gathering Sample  
bottleware.

0800: At Summit 23. Need a new  
hand Auger.

1000: Call Jim G. / Scott S. abt  
Hand Auger delivery.

1045: Hand Auger delivery. KLL to  
site to begin Soil Collection.

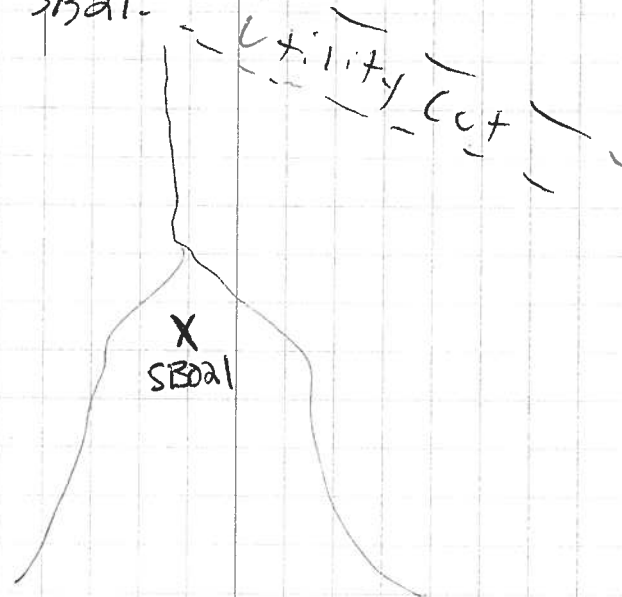
1615: Hand Auger Complete. To  
trailer to ship samples.

1745: Leave trailer for FedEx.

Nov 2<sup>nd</sup>

0800: KLL Onsite to recon  
possible well locations.

a No discernable rd except  
for utility cut 300  
yards downstream from  
SBA1.

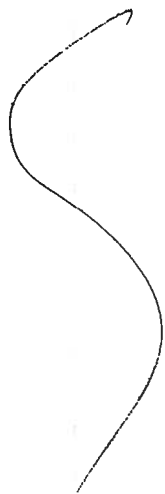


0945: KLL offsite for shift.

November 5<sup>th</sup>

0830: KL + BR (L Survey) onsite  
to survey all points.

1230: All points surveyed.



KL

1/22/13 NSA Crane/Tt

Sunny, very cold temps near 0°F  
Tt: Jim Coffman and  
Kevin Losekamp at visitor's  
pass office @ 0830 to  
obtain badge for Coffman.

Proceed to job trailer (Tt)  
and to see Tom Brent  
(Envl Coord.)

Loadup auxiliary survey  
equipment & head to Sturm 23  
for geophysical survey today.

Geophysical Survey Obj: Search  
for possible UST (steel)  
shown on historical plans

Establish 30' x 70' survey (grid)  
area - 5 ft. marks - for geophys  
survey around plan UST location  
using 2.5 ft line spacing.  
Perform EM61-mk2 survey  
over grided survey area  
after manufacturer's recommended setup.

1/22/13 NSA Crane/TE

Geonics **EM61** wheelmode (0.61')

### Differential Mode Data

0E	0N	70N
2.5E	70N	0N
5E	0N	70N
7.5E	70N	0N
10E	0N	70N
12.5E	70N	0N
15E	0N	70N
17.5E	70N	0N
20E	0N	70N
22.5E	70N	0N
25E	0N	70N
27.5E	70N	0N
30E	70N	20N

End next to bollard  
for gas meter

GPR survey conducted across grid

**GPR**

GPR system GSSI SIR 2000  
system equipped with 400 MHz  
antenna. 32 scans/s, 60ns  
time window set, manufacturer's  
recommendations followed for  
calibrations / setup. Slow walking pace  
for survey.

**GPR**

#.file	Line	Start	End	
1	0	0N	70N	M's on 10s
2	2.5E	"	"	
3	5E	"	"	
4	7.5E	"	"	
5	10E	"	"	
6	12.5E	"	"	
7	15E	"	"	
8	17.5E	"	"	
9	20E	3N	70N	
10	22.5E	2N	70N	
11	25E	0N	70N	
12	27.5E	0N	70N	
13	30E	0N	70N	
14	2.5N	32.5E	2.5W	M's 10 start from start (22.5/12.5/2.5)
15	5N	"	"	
16	7.5N	30E	"	SP bollard
17	10N	30E	"	"
18	12.5N	30E	"	"
19	15N	"	"	"
20	17.5N	"	"	"
21	20N	32.5E	"	"



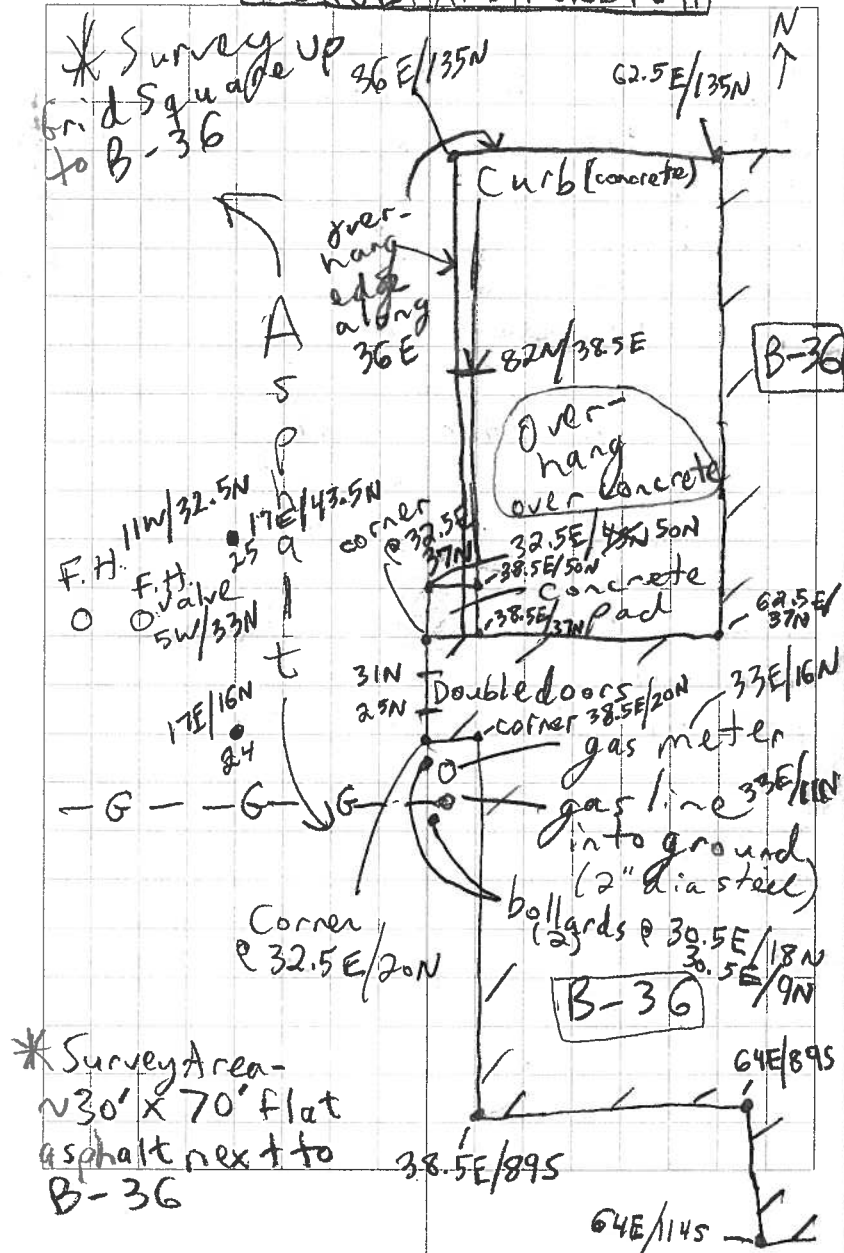
1/22/13 NSA Crane/Tt

GPR

File	Line	Start	End
22	22.5N	32E	2.5W
23	25N	32E	2.5W
24	27.5N	"	"
25	30N	"	"
26	32.5N	"	"
27	35N	"	"
28	37.5N	32.5E	2.5W
29	40N	"	"
30	42.5N	"	"
31	45N	"	"
32	47.5N	"	"
33	50N	"	"
34	52.5N	"	"
35	55N	"	"
36	57.5N	"	"
37	60N	"	"
38	62.5N	"	"
39	65N	"	"
40	67.5N	"	"
41	70N	"	"

\* A Schonstedt GA 72 magnetic locator survey was conducted to cover the survey grid and no large ferrous subsurface objects were detected. Go/no go test ✓

## SURVEY AREA SKETCH



1/22/13 NSA Crane/Tt

About a 1 hr delay today  
in starting geophysical survey  
due to a slow wait for  
building tenant to move  
oversized fork lift out of  
way for survey to be conducted.

Geophysical equipment packed,  
site sketch and survey tie in  
completed by about 4:30 pm  
and head off site for FedEx  
dropoff of geophysical  
survey equipment in  
Bloomington.

JAC

MAY 18, 2013 (SATURDAY)

NSA CRANE SITE 23

AT SITE: STC/CR

AM: CLOUDY, WARM (LT RAIN)

PM: " "

NOTE:

ORIGINAL ENTRIES MADE IN NB1460  
PAGE 111. AFTER WORK AT UX07.  
STC/CR WENT TO SITE 23.

1415: AT SITE FOR PAH SAMPLING  
USING DPT RIG TO TAKE SAMPLES  
DUE TO HARD GRAVEL/ASPHALT  
AT SURFACE. DRILLED 3 BORINGS  
USING DPT RIG TO  $\pm 4'$ . SEE  
BORING LOGS FOR DETAILS. SEE  
SAMPLE LOG SHEETS AND COES  
FOR SAMPLES TAKEN

1530: DONE WITH BORINGS AND  
RETURN TO SITE TRAILER

1600: AT TRAILER - PLACE ICE ON  
SAMPLES AND PREPARE FOR  
SUNDAY'S WORK.

JAC

VOID  
SJC

MAY 19, 2013 (SUNDAY)

AT SITE: CR. - 0830

830 - CR begins set up to collect  
HA samples from SWMU 23

845 - CR walks the site to locate  
pin flags for pre-marked  
locations

930 - CR begins soil sample and  
sediment sample collection.  
See Multiple Sample Log Sheets  
for more details.

1315 - CR finishes soil and sediment  
sample collection.

1330 - CR leaves SWMU 23.

CR



May 2014

Jim Goerdt  
Norm Piper  
Jim Coffman

DPT-Chase En  
Nathan

5-22-14

1800 - JG to Summ  
23 to mark out former  
& new sample  
locations.

Met w/ utility  
clearance person.

Had to relocate

SB001 a short  
distance to stay away  
from gas line in  
the area.

1940 - Finished  
marking Summ 23.

R. B. Gant



5-23-14

0800 - At field trailer prepping for Sumu 23 sampling.

0835 - At Sumu 23 showing NP & JC sample locations. Locations SB059 & SB082 are hand auger locations while all others are DPT accessible.

JC & NP remain at site to collect samples. JG to Sumu 3.

1015 - Picked up lead samples to analyze via XRF.

FD-01	SB089-0204	Pb
FD-02	SB083-0406	Pb
FD-03	SB089-0002	Pb
FD-04	SB059-0204	PAHs

SB084-0002  
- XRF reading of 502 ppm. Bordered by other samples.

SS085-0002  
- XRF of 845 ppm  
- Bordered by other samples.

SS082-0002  
- XRF of 2570 ppm  
- Added location (stop-out) SB092, which had low XRF readings.

Area appears to be fully bounded as far as lead goes.

1430 - GPS of new locations.

1500 - Demo b





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: \_\_\_\_\_

Project No.: \_\_\_\_\_

112IG06018

Sample ID No.: 2355049-0002

Sample Location: 2358049

Sampled By: RW

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA

Date: 3-21-14	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1140	0-2'	Brown	CLAY / ROCKS
Method: GRAB			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION

Analysis	Container Requirements	Collected	Other
PAHS	1 4oz	✓	

## OBSERVATIONS / NOTES

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

TK-Will



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23  
Project No.: 112IG06018

Sample ID No.: 23SSD50-0002  
Sample Location: 23SD50  
Sampled By: per  
C.O.C. No.: \_\_\_\_\_

- ☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>3-21-14</u>	<u>0-2'</u>	<u>Brown</u>	<u>Brown CLAY Dry</u>
Time: <u>1130</u>			
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAHS</u>	<u>1 4oz</u>	<u>✓</u>	

## OBSERVATIONS/NOTES:

## MAP:

REFUSAL @ 8"

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.:





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23  
Project No.: 112IG06018

Sample ID No.: 23SSD51-0002  
Sample Location: 23SD51  
Sampled By: WJ  
C.O.C. No.: \_\_\_\_\_

- ☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>3-21-14</u>	<u>0-2'</u>	<u>Brown</u>	<u>SOFT/moist clay</u>
Time: <u>1120</u>			
Method: <u>GRAB</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>1 4oz</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

## MAP:

## Circle if Applicable:

MS/MSD

Duplicate ID No.:

## Signature(s):

WJ



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name:

23

Project No.:

112IG06018

Sample ID No.: 23SD52-0002

Sample Location: 23SD52

Sampled By:

KW

C.O.C. No.:

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other:☐ QA Sample Type:

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	3-21-14	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	1115	0-2'	brown	SOFT CLAY - LITTLE BIT OF SAND
Method:	G			
Monitor Reading (ppm):				

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
PAH	1 402	✓	

## OBSERVATIONS / NOTES:

## MAP:

RETRIAL @ 1.0'

## Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

KW

Project Site Name: <u>23</u>		Sample ID No.: <u>23SS053-0002</u>		
Project No.: <u>112IG06018</u>		Sample Location: <u>23SS053</u>		
<input checked="" type="checkbox"/> Surface Soil		Sampled By: <u>ICW</u>		
<input type="checkbox"/> Subsurface Soil		C.O.C. No.: _____		
<input type="checkbox"/> Sediment		Type of Sample:		
<input type="checkbox"/> Other: _____		<input type="checkbox"/> Low Concentration		
<input type="checkbox"/> QA Sample Type: _____		<input type="checkbox"/> High Concentration		
GRAB SAMPLE DATA:				
Date: <u>3-21-14</u>	Depth Interval: <u>0.2'</u>	Color: <u>Brown/WHITE</u>	Description (Sand, Silt, Clay, Moisture, etc.): <u>ROCKS/CLAY ①</u>	
Time: <u>1655</u>				
Method: <u>G</u>				
Monitor Reading (ppm):				
COMPOSITE SAMPLE DATA:				
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				
SAMPLE COLLECTION INFORMATION:				
Analysis	Container Requirements	Collected	Other	
<u>PAHS</u>	<u>1402</u>	<u>✓</u>		
OBSERVATIONS / NOTES:		MAP:		
<u>0-6" = white gravel ①</u> <u>6"-12" Brown Clay / gravel</u> <u>REFUSAL @ 12"</u>				
Circle if Applicable:		Signature(s):		
MS/MSD	Duplicate ID No.:	<u>JLWLL</u>		





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 23SS054-0002Sample Location: 23SB054Sampled By: kw

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>3-21-14</u>	<u>0-2'</u>		
Time: <u>1045</u>			
Method: <u>C</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAHs</u>	<u>1407</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

MAP:

REFUSAL @ 1.0' BGS

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

JL. W. L.



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 2355055-0002Sample Location: 2358055Sampled By: KW

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1035</u>	<u>0-2'</u>	<u>Brown</u>	<u>SOFT CLAY</u>
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAHS</u>	<u>1402</u>	<u>✓</u>	

## OBSERVATIONS/NOTES:

## MAP:

--	--

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

K. W. L.



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name:

23

Project No.:

112IG06018

Sample ID No.: 23SS056-0002

Sample Location: 23SB056

Sampled By:

LW

C.O.C. No.:

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other:☐ QA Sample Type:

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	3-26-14	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	1025	0-2'	Brown	CLAY / ROOTS
Method:	G			
Monitor Reading (ppm):				

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
PAHS	1402	✓	

## OBSERVATIONS/NOTES:

REFUSAL @ 1.5'

## MAP:

## Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

L.ULL





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

SB057

Project Site Name:

23

Project No.:

112/G06018

Sample ID No.: 23SS057-0002

Sample Location: 23SR057

Sampled By:

W

C.O.C. No.:

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other:☐ QA Sample Type:

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
3-21-14	0-2'	Brown	Clay, Few Rocks
Time: 1015			
Method: G			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
PAHs	1407	✓	

## OBSERVATIONS/NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

K. W. H.





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page      of     Project Site Name: 23Project No.: 112IG06018Sample ID No.: 23SS058-0002Sample Location: 23S058Sampled By: RLJC.O.C. No.:     ☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other:     ☐ QA Sample Type:     

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>3-21-14</u>	<u>0-2'</u>	<u>Brown</u>	<u>moist soft clay</u>
Time: <u>1610</u>			
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAHs</u>	<u>1403</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:     

Signature(s):


RLJ

Project Site Name:	<u>23</u>	Sample ID No.:	<u>2355059-0007</u>
Project No.:	<u>112IG06018</u>	Sample Location:	<u>235A059</u>
		Sampled By:	<u>KW</u>
<input checked="" type="checkbox"/> Surface Soil		C.O.C. No.:	<u></u>
<input type="checkbox"/> Subsurface Soil			
<input type="checkbox"/> Sediment		Type of Sample:	
<input type="checkbox"/> Other:	<u></u>	<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> QA Sample Type:	<u></u>	<input type="checkbox"/> High Concentration	

GHAB SAMPLE DATA:			
Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
3-21-14	0-2'	Brown	Rock / Clay mix
Time: 1005			
Method: G			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA				
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

[illegible]

OBSERVATIONS / NOTES:		MAP:
Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name:	<u>23</u>	Sample ID No.:	<u>2355060-0002</u>
Project No.:	<u>112IG06018</u>	Sample Location:	<u>2358060</u>
<input checked="" type="checkbox"/> Surface Soil		Sampled By:	<u>ICW</u>
<input type="checkbox"/> Subsurface Soil		C.O.C. No.:	
<input type="checkbox"/> Sediment		Type of Sample:	
<input type="checkbox"/> Other:		<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> QA Sample Type:		<input type="checkbox"/> High Concentration	

## GRAB SAMPLE DATA:

Date:	<u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	<u>0955</u>	<u>0-2'</u>	<u>Brown/Gry</u>	<u>CLAY</u>
Method:	<u>G</u>			
Monitor Reading (ppm):				

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAHs</u>	<u>1 402</u>	<input checked="" type="checkbox"/>	

## OBSERVATIONS/NOTES:

MAP:

REFUSAL @ 10"

Circle 1: Applicable:

Signature(s):

MS/MSD

Duplicate ID No.:

TK-026



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 23SS061-0002Sample Location: 23SS061Sampled By: kw

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>3-21-14</u>	<u>0-2'</u>	<u>LT BRN</u>	<u>CLAY moist</u>
Time: <u>0945</u>			
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>14oz</u>	<input checked="" type="checkbox"/>	

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

KLW



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name:	<u>23</u>	Sample ID No.:	<u>2358062-0002</u>
Project No.:	<u>112IG06018</u>	Sample Location:	<u>2358062</u>
<input checked="" type="checkbox"/> Surface Soil		Sampled By:	<u>IW</u>
<input type="checkbox"/> Subsurface Soil		C.O.C. No.:	
<input type="checkbox"/> Sediment		Type of Sample:	
<input type="checkbox"/> Other:		<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> QA Sample Type:		<input type="checkbox"/> High Concentration	

## GRAB SAMPLE DATA:

Date:	<u>3-21-14</u>	Depth Interval	<u>0-2'</u>	Color	<u>DK BROWN</u>	Description (Sand, Silt, Clay, Moisture, etc.)	<u>CLAY / TINY ROCKS</u>
Time:	<u>0930</u>						
Method:	<u>G</u>						
Monitor Reading (ppm):							

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAHs</u>	<u>1402</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

MAP:

<u>REFUSAL @ 1.0'</u>		Signature(s): <u>TK. W26</u>
Circle if Applicable:	Duplicate ID No.:	
<input type="checkbox"/> MS/MSD		





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 2355064-0002Sample Location: SB064Sampled By: KW

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1155</u>	<u>0-2</u>	<u>DK BROWN</u>	<u>SOFT CLAY / ROCKS</u>
Method: <u>6</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>140Z</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

## MAP:

--	--

Circle if Applicable

Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_

TL WLL





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 25SB064-0204Sample Location: SB064Sampled By: lw

C.O.C. No.: \_\_\_\_\_

- ☐ Surface Soil  
☒ Subsurface Soil  
☐ Sediment  
☐ Other:  
☐ QA Sample Type:

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1200</u>	<u>2-4'</u>	<u>Brown</u>	<u>ROCKS / CLAY</u>
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>1402</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

JL. ULLT



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 2358064.0406Sample Location: 2358064Sampled By: W

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1205</u>	<u>4-6'</u>	<u>LT BROWN</u>	<u>HARD CLAY</u>
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>1 4oz</u>	<u>✓</u>	

## OBSERVATIONS/NOTES:

## MAP:

RETUSAL @ 5'

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

TC-WLL





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 23SS065-0002Sample Location: 23SS065Sampled By: ICW

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>3.21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1215</u>	<u>0-2</u>	<u>BLACK / WHITE</u>	<u>ROCKS / TINY BIT OF CLAY</u>
Method: <u>GRAB</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAHS</u>	<u>14oz</u>	<input checked="" type="checkbox"/>	

## OBSERVATIONS / NOTES:

## MAP:

~~REFUSAL @ 2' - NO SUB SURFACE~~

REFUSAL @ 2' - NO SUB SURFACE

- SAMPLE IS MAINLY ROCKS

Circle if Applicable:

MS/MSD

Duplicate ID No.: ED01-032114Signature(s): ICW



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 2355066-0002Sample Location: SRD126Sampled By: W

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1230</u>	<u>0-2</u>	<u>DK Brown</u>	<u>CLAY / ROCKS</u>
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>1.902</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

## MAP:

~~DUP CORRECTED~~

Circle if Applicable:

MS/MSD

Duplicate ID No.:

~~112IG06018~~

Signature(s):

R. W. U





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 23SB066-0204Sample Location: SB066Sampled By: ICW

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1235</u>	<u>2-4'</u>	<u>LT BROWN</u>	<u>CLAY - MOIST</u>
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>1402</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

ICW



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG08018Sample ID No.: 23SD066-0406Sample Location: SB066Sampled By: HW

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1240</u>	<u>4-6'</u>	<u>LT Brown</u>	<u>MOIST SILTY CLAY</u>
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>1 4oz</u>	<u>✓</u>	

## OBSERVATIONS/NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

JK. WLF





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 1355067-0002Sample Location: 23067Sampled By: W

C.O.C. No.: \_\_\_\_\_

- ☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

- ☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>3-21-14</u>			
Time: <u>1300</u>			
Method: <u>GRAB</u>	<u>0-2'</u>	<u>DARK BROWN</u>	<u>Dry clay / silt</u>
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>1402</u>		

## OBSERVATIONS / NOTES

## MAP

DUP COLLECTED

Circle if Applicable:

MS/MSD

Duplicate ID No.:

FD01-032114

Signature(s):

K. ALY



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: \_\_\_\_\_

23

Project No.: \_\_\_\_\_

112IG06018

Sample ID No.: 23SB067-0204

Sample Location: SB067

Sampled By: ILL

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☒ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: 3-21-14	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1305	2-4'	LT Brown	MOIST CLAY
Method: G			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
PAH	1402	✓	

## OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

JL-024



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 23Project No.: 112IG06018Sample ID No.: 23SB067-0406Sample Location: SB067Sampled By: AW

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAVE SAMPLE DATA:

Date: <u>3-21-14</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1310</u>	<u>4-6'</u>	<u>LT BROWN / ORANGE</u>	<u>WET CLAY</u>
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PRAI</u>	<u>1 702</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

TC well





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: 73  
Project No.: 112IG06018

Sample ID No.: 23SS068-0002  
Sample Location: SB068  
Sampled By: juw  
C.O.C. No.: \_\_\_\_\_

☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>3-21-14</u>	<u>0-2'</u>	<u>GRAY</u>	<u>HALE ROCKS / CLAY - DRY</u>
Time: <u>1330</u>			
Method: <u>G</u>			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
<u>PAH</u>	<u>1402</u>	<u>✓</u>	

## OBSERVATIONS / NOTES:

## MAP:

## Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

JK-ALLC



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: \_\_\_\_\_

Project No.: \_\_\_\_\_

112IG06018

Sample ID No.: 23SB068 - 0204

Sample Location: SB068

Sampled By: CW

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAVE SAMPLE DATA

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
3-21-14	2-4'	Gray	MAINLY ROCKS - MINOR CLAY - MOIST
Time: 1335			
Method: G			
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION

Analysis	Container Requirements	Collected	Other
PAH	1402	✓	

## OBSERVATIONS / NOTES

## MAP

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

JL. W. 18





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: \_\_\_\_\_

Project No.: \_\_\_\_\_

112IG06018

Sample ID No.: \_\_\_\_\_

Sample Location: \_\_\_\_\_

Sampled By: \_\_\_\_\_

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: 3-21-14	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1340	4-6'	Gray	MOSTLY ROCKS, RNY
Method: G			BIT OF CLAY - moist
Monitor Reading (ppm):			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
PAH	1402	✓	

## OBSERVATIONS / NOTES:

## MAP:

\* REFUSAL @ 4.5'

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

JL. Allt



## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1\_ of 1\_

Project Site Name: NSA Crane - SWMU 23  
 Project No.: 112IG06018

Sample ID No.: 23SB076  
 Sample Location: 23SS076-0002  
 Sampled By: Goerd  
 C.O.C. No.: 042014-001

☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other:  
☐ QA Sample Type:

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	4/17/2014	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	1625	0-2'	Lt brn	soil with some clay damp
Method:	HA			
Monitor Reading (ppm):				

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Pb	(1) 8 oz jar	Yes	

## OBSERVATIONS / NOTES:

## MAP:

## Circle if Applicable:

MS/MSD

Duplicate ID No.:

## Signature(s):

**SOIL & SEDIMENT SAMPLE LOG SHEET**Page 1 of 1

Project Site Name:	NSA Crane - SWMU 23	Sample ID No.:	23SB076
Project No.:	112IG06018	Sample Location:	23SB076-0203
		Sampled By:	Goerd
		C.O.C. No.:	042014-001
<input checked="" type="checkbox"/> Surface Soil <input type="checkbox"/> Subsurface Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Other: _____ <input type="checkbox"/> QA Sample Type: _____		Type of Sample: <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration	

**GRAB SAMPLE DATA:**

Date:	4/17/2014	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	1625	2-3'	Org	clayey soil damp
Method:	HA			
Monitor Reading (ppm):				

**COMPOSITE SAMPLE DATA:**

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

**SAMPLE COLLECTION INFORMATION:**

Analysis	Container Requirements	Collected	Other
Pb	(1) 8 oz jar	Yes	

**OBSERVATIONS / NOTES:****MAP:**

--	--

**Circle if Applicable:****Signature(s):**

MS/MSD	Duplicate ID No.:	
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**SOIL & SEDIMENT SAMPLE LOG SHEET**Page 1 of 1

Project Site Name: <u>NSA Crane - SWMU 23</u> Project No.: <u>112IG06018</u>		Sample ID No.: <u>23SB077</u> Sample Location: <u>23SS077-0002</u> Sampled By: <u>Goerd</u> C.O.C. No.: <u>042014-001</u>	
<input checked="" type="checkbox"/> Surface Soil <input type="checkbox"/> Subsurface Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Other: _____ <input type="checkbox"/> QA Sample Type: _____		Type of Sample: <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration	

GRAB SAMPLE DATA:				
Date:	4/17/2014	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	1645	0-2'	Lt brn	soil with some clay damp
Method:	HA			
Monitor Reading (ppm):				

COMPOSITE SAMPLE DATA:				
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:			
Analysis	Container Requirements	Collected	Other
Pb	(1) 8 oz jar	Yes	

OBSERVATIONS / NOTES:	MAP:

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	
Yes		

**SOIL & SEDIMENT SAMPLE LOG SHEET**

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Project Site Name: <u>NSA Crane - SWMU 23</u>		Sample ID No.: <u>23SB078</u>	
Project No.: <u>112IG06018</u>		Sample Location: <u>23SS078-0002</u>	
<input checked="" type="checkbox"/> Surface Soil		Sampled By: <u>Goerd</u>	
<input type="checkbox"/> Subsurface Soil		C.O.C. No.: <u>042014-001</u>	
<input type="checkbox"/> Sediment		Type of Sample:	
<input type="checkbox"/> Other: _____		<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> QA Sample Type: _____		<input type="checkbox"/> High Concentration	

GRAB SAMPLE DATA:				
Date: <u>4/17/2014</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)	
Time: <u>1700</u>	<u>0-2'</u>	<u>brn</u>	<u>soil with some clay      bedrock      damp</u>	
Method: <u>HA</u>				
Monitor Reading (ppm):				

COMPOSITE SAMPLE DATA:				
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:			
Analysis	Container Requirements	Collected	Other
Pb	(1) 8 oz jar	Yes	

OBSERVATIONS / NOTES:	MAP:
Refusal due to bedrock at ~10"	

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.: <u>23FD041714-01</u>	

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane - SWMU 23		Sample ID No.: 23SB079	
Project No.: 112IG06018		Sample Location: 23SS079-0002	
		Sampled By: Goerd	
		C.O.C. No.: 042014-001	
<input checked="" type="checkbox"/> Surface Soil <input type="checkbox"/> Subsurface Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Other: <input type="checkbox"/> QA Sample Type:		Type of Sample: <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration	

GRAB SAMPLE DATA:				
Date: 4/17/2014	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)	
Time: 1650	0-2'	Lt brn	soil with some clay damp	
Method: HA				
Monitor Reading (ppm):				

COMPOSITE SAMPLE DATA:				
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:			
Analysis	Container Requirements	Collected	Other
Pb	(1) 8 oz jar	Yes	

OBSERVATIONS / NOTES:	MAP:
Refusal due to bedrock at ~16"	

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	



## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name:	NSA Crane - SWMU 23	Sample ID No.:	23SB080
Project No.:	112IG06018	Sample Location:	23SS080-0002
<input checked="" type="checkbox"/> Surface Soil		Sampled By:	Goerd
<input type="checkbox"/> Subsurface Soil		C.O.C. No.:	042014-001
<input type="checkbox"/> Sediment		Type of Sample:	
<input type="checkbox"/> Other:		<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> QA Sample Type:		<input type="checkbox"/> High Concentration	

## GRAB SAMPLE DATA:

Date:	4/17/2014	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	1640	0-2'	lt brn	clayey soil damp
Method:	HA			
Monitor Reading (ppm):				

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
Pb	(1) 8 oz jar	Yes	

## OBSERVATIONS / NOTES:

Refusal due to bedrock at ~18"  
 Collected in location just before drop over cliff

## MAP:

## Circle if Applicable:

MS/MSD Duplicate ID No.:

## Signature(s):



**SOIL & SEDIMENT SAMPLE LOG SHEET**Page 1 of 1

Project Site Name:	NSA Crane - SWMU 23	Sample ID No.:	23SB081
Project No.:	112IG06018	Sample Location:	23SS081-0002
<input checked="" type="checkbox"/> Surface Soil		Sampled By:	Goerd
<input type="checkbox"/> Subsurface Soil		C.O.C. No.:	042014-001
<input type="checkbox"/> Sediment		Type of Sample:	
<input type="checkbox"/> Other:		<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> QA Sample Type:		<input type="checkbox"/> High Concentration	

**GRAB SAMPLE DATA:**

Date:	4/17/2014	Depth Interval		Color		Description (Sand, Silt, Clay, Moisture, etc.)	
Time:	1710	0-2'		brn		soil with some clay	damp
Method:	HA						
Monitor Reading (ppm):							

**COMPOSITE SAMPLE DATA:**

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

**SAMPLE COLLECTION INFORMATION:**

Analysis	Container Requirements	Collected	Other
Pb	(1) 8 oz jar	Yes	

**OBSERVATIONS / NOTES:****MAP:**

Refusal due to bedrock at ~10" Collected in location just before drop over cliff	
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**Circle if Applicable:****Signature(s):**

MS/MSD	Duplicate ID No.:	
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**MULTIPLE SAMPLE LOG SHEET**PAGE 1 OF 1
☒ SURFACE SOIL  
☒ SUBSURFACE SOIL  
☐ OTHER \_\_\_\_\_

☒ SEDIMENT  
☐ LAGOON / POND
SIGNATURE(S): C. RumerSAMPLER (S): C. RumerLOCATION: SWMU 23 - Battery Shop
 PROJECT NAME: SWMU 23 - Battery Shop  
 PROJECT NAME: SWMU 17 Dump Area PCB Delineation  
 PROTECT NUMBER: 112G01578 03539

SAMPLE No.	SAMPLE METHOD	DEPTH (FL)	DATE	TIME	CONCENTRATION (L) LOW (H) HIGH	(G) GRAB (C) COMPOSITE	TOTAL No. OF CONTAINERS	ANALYSES										USCS	PID READING	SOIL DESCRIPTION
								PAHS	Metals	VOCs										
23SB030-0002	HA	0-2	5/19	940	L	G	4	X										Silty Clay, Brn, Moist		
23SB030-0204		2-3		945			1	X										Clay, Moist, Lt Brn, Rocky		
23SB031-0002		0-2		1005			1	X										Silty Clay, Brn, Roots, Moist		
23SB032-0002		0-2		1030			1	X										Silty Clay, Brn, Roots, Moist		
23SB032-0204		2-3		1035			1	X										Clay, Light Brn → Red, Sandstone		
23SB033-0002		0-2		1100			3		X									Silty clay, Rocks, Brown - Lt Brn, Moist		
23SB034-0002		0-2		1130			1		X									Silty Clay, Brown, Moist		
23SB034-0204		2-4		1135			1		X									Clay, Brown, Moist, Si H		
23SB-035-0002		0-1		1140			1		X									Rocks, Clay, Dark Brn, Layer of Pebbles		
23SB-036-0002		0-2		1155			1		X									Rocky, Clay, Brn, Org, Moist		
23SB-036-0204		2-4		1200			1		X									Clay, Brn, Moist, Sandstone at 35'		
23SD009-0006	Trowel TE	0-0.5		1220			9	X	X	X								Pebbles, Wet, Drainage Way		
23SB037-0002	HA	0-2		1310			1		X									Clay, Organic m., Moist, Rocks		
23SB037-0204		2-4		1315			1		X									Clay, Some Sandstone, Moist		
REMARKS: 23SB030-0002 & F051913-01 (MS/MSD) SB030 - Refusal at 3' SB032 Refusal at 2 ft. SB031 - " " 1.5' (Surrounded by 5 trees) (Roots)								LABORATORY: <u>SURBEL Empirical</u>								COC No.:				

 SB033 - Refusal at 1' (bed of Rocks)  
 SB035 - Refusal at 1' (Pebbly Rock Debris Area)

F03-05 → SD009



Tetra Tech, Inc.

# MULTIPLE SAMPLE LOG SHEET

PAGE 1 OF 1

☒ SURFACE SOIL      ☐ SEDIMENT  
☒ SUBSURFACE SOIL      ☐ LAGOON / POND  
☐ OTHER \_\_\_\_\_

SIGNATURE(S): SJ Conte

SAMPLER (S): SJC/CR

PROJECT NAME: NSA CRANE  
PROJECT NUMBER: 112G03539

LOCATION: SWMU 23

SAMPLE No.	SAMPLE METHOD	DEPTH (Ft.)	DATE	TIME	CONCENTRATION (L) LOW (H) HIGH	(G) GRAB (C) COMPOSITE	TOTAL No. OF CONTAINERS	ANALYSES						SOIL GROUP #	PID READING	SOIL DESCRIPTION	
								PAHs									
23SB027-0002	DPT	0-2	5/18	1430	L	G	1	1						ML	0	GRAY CLAY/SILT/GRAVEL DAMP	
23SB027-0204	"	2-4	"	1435	L	G	1	1						CL/ML	0	CLAYEY SILT/SILTY CLAY <sup>MOIST</sup>	
23SB028-0002	"	0-2	"	1440	L	G	1	1						ML	0	CLAYEY SILT GRAVEL DAMP	
23SB028-0204	"	2-4	"	1445	L	G	1	1						CL/ML	0	CLAYEY SILT/TR ROCK/ROOTS <sup>MOIST</sup>	
23SB029-0002	"	0-2	"	1450	L	G	1	1						ML	0	CLAY, SILT, GRAVEL DAMP	
23SB029-0204	"	2-4	"	1455	L	G	1	1						CL	0	SILTY CLAY, ROOTS, <sup>TR</sup> DARK STAIN @ 3.8'	
REMARKS: DPT = Direct Push Tech								LABORATORY: Empirical						COC No.: 2219			



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 2355001-0002

Sample Location: 2353001

Sampled By: KL, JF, JG

C.O.C. No.:

- ☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other:  
☐ QA Sample Type:

Type of Sample:

- ☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date: 10/7/12	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0915	0-2	BRN	Silty clay some sand gravel
Method: PPT			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
<del>TOC</del>	<del>1 4 oz</del>		

## OBSERVATIONS / NOTES:

## MAP:

Location on woodline of parking lot.  
fill

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.:

23FD100712-01



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 235B001-1012Sample Location: 235B001Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>0930</u>	<u>10-12</u>	<u>DK BRN</u>	<u>Stiff silty clay</u>
Method: <u>OPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
<del>TOC</del>	<del>1 4 oz</del>		

## OBSERVATIONS / NOTES:

## MAP:

Strong fuel odor from 10-12'

## Circle if Applicable:

Signature(s):

MS/MSD

Duplicate ID No.:

235-D100712-02



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 23SS002-0002

Sample Location: 23S3002

Sampled By: KL, JF, JG

C.O.C. No.:

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other:☐ QA Sample Type:

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: 10/7/12	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0945	0-2	BEN	gravel silt + sand Some clay fill.
Method: DPT			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

4 pushes for sample volume  
21 jars

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SB002-1012Sample Location: 23SB002Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1000</u>	<u>10-12</u>	<u>BRN</u>	<u>Silty Clay some sand</u>
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
<del>TOC</del>	<del>1 4 oz</del>		

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 20.0'

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s): \_\_\_\_\_



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
 Project No.: 112G03539

Sample ID No.: 23SS003-0002  
 Sample Location: 23SB003  
 Sampled By: KL, JF, JG  
 C.O.C. No.: \_\_\_\_\_

- ☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1015</u>	<u>0-2</u>	<u>BRN</u>	<u>Fill-Silty Sandy clay with mostly gravel</u>
Method: <u>PPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

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## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.:

23FD00712-03



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SB003-0810Sample Location: 23SB003Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1025</u>	<u>8-10</u>	<u>BRN</u>	<u>Silty clay</u>
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 12'3"

## Circle if Applicable:

Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 2355004-0002Sample Location: 235B004Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1350</u>	<u>0-2</u>	<u>BEN</u>	<u>Fill - gravel w/ sand, silt, clay.</u>
Method: <u>DPI</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

2 pushes for sample volume

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 23SB004-0810

Sample Location: 23SB004

Sampled By: KL, JF, JG

C.O.C. No.:

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other:☐ QA Sample Type:

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/7/12	8-10	BRN	Silty clay
Time: 1405			
Method: DPT			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

Signature(s):

MS/MSD

Duplicate ID No.:



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SS00S-0002Sample Location: 23S13005Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1415</u>	<u>0-2</u>	<u>Bkn/gray</u>	<u>fill - gravel w/ sand, silt, clay.</u>
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

3 pushes for sample volume

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
 Project No.: 112G03539

Sample ID No.: 23S30050810  
 Sample Location: 23S3005  
 Sampled By: KL, JF, JG  
 C.O.C. No.: \_\_\_\_\_

- ☐ Surface Soil  
☒ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/7/12</u>	<u>8-10</u>	<u>BRN</u>	<u>Silty Clay</u>
Time: <u>1435</u>			
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Observations / Notes area for handwritten notes.

Map area for handwritten notes.

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.:



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SS006-0002Sample Location: 23SB006Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1455</u>	<u>0-2</u>	<u>BROWN</u> <u>gray</u>	<u>fill-gravel w/ silt, sand</u> <u>clay</u>
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

2 pushes

## Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s): \_\_\_\_\_



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 235B0060608Sample Location: 235B006Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1510</u>	<u>6-8</u>	<u>gray/ greenish</u>	<u>Silty clay</u>
Method: <u>PPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Strong Red Odor 6-8

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 23SS 007-0002Sample Location: 23SB 007

Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1015</u>	0-2	<u>BEN/BLK</u>	<u>silty clayey sand</u>
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz <u>15m</u>	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA <u>15m</u>	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>4 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 1.8'

## Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

## Signature(s):



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SS 008-0002Sample Location: 23SB 008Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1230</u>	0-2	<u>DE</u> <u>BRN</u>	<u>Sandy Clay</u>
Method: <u>Hand Auger</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>4 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at .8'. Hard to move rocks  
to get access to soil

## Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

## Signature(s):



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NSA Crane SWMU 23  
 Project No.: 112G03539

Sample ID No.: 23SS 009-0002  
 Sample Location: 23SB 009  
 Sampled By: KL, JF, JG  
 C.O.C. No.: \_\_\_\_\_

☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>11/01/12</u>	<u>0-2</u>	<u>LT</u> <u>BEN</u>	<u>Silty Sand</u>
Time: <u>1300</u>			
Method: <u>Hand Auger</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>1 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 1.2' Location near  
Headwall at edge of parking  
lot.

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.:

OK - JF





## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name:	NSA Crane SWMU 23	Sample ID No.:	23SS <u>080-0002</u>
Project No.:	112G03539	Sample Location:	23SS <u>010</u>
<input checked="" type="checkbox"/> Surface Soil		Sampled By:	KL, JF, JG
<input type="checkbox"/> Subsurface Soil		C.O.C. No.:	
<input type="checkbox"/> Sediment		Type of Sample:	
<input type="checkbox"/> Other:		<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> QA Sample Type:		<input type="checkbox"/> High Concentration	

## GRAB SAMPLE DATA:

Date:	<u>4/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	<u>1330</u>		<u>BRN</u>	
Method: Hand Auger		0-2		<u>Silty sand</u>
Monitor Reading (ppm NA)				

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>1 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at

1.6', Location near  
Headwall.

Circle if Applicable:

Signature(s):

MS/MSD

Duplicate ID No.:

OK Sp



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
Project No.: 112G03539

Sample ID No.: 23SS 001-0002  
Sample Location: 23SB 011  
Sampled By: KL, JF, JG  
C.O.C. No.: \_\_\_\_\_

- ☒ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1415</u>	0-2	LT BRN	Silty Sand
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	X	
Metals	1 4oz	X	
PAHs	1 4oz	X	
PCBs	1 4 oz	X	
TPH	1 40 ml VOA	X	
Sulfate/pH	1 4 oz	X	
TOC	4 4 oz	X	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 6.8'

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.:

OK-808



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name:	NSA Crane SWMU 23	Sample ID No.:	23SS <u>012-0002</u>
Project No.:	112G03539	Sample Location:	23SB <u>012</u>
		Sampled By:	KL, JF, JG
		C.O.C. No.:	
<input checked="" type="checkbox"/> Surface Soil		Type of Sample:	
<input type="checkbox"/> Subsurface Soil		<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> Sediment		<input type="checkbox"/> High Concentration	
<input type="checkbox"/> Other:			
<input type="checkbox"/> QA Sample Type:			

## GRAB SAMPLE DATA:

Date:	<u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:	<u>1430</u>			
Method: Hand Auger				
Monitor Reading (ppm NA)		0-2	BRN	Silty Sand

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	X	
Metals	1 4oz	X	
PAHs	1 4oz	X	
PCBs	1 4 oz	X	
TPH	1 40 ml VOA	X	
Sulfate/pH	1 4 oz	X	
TOC	4 4 oz	X	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at <u>2.1'</u>	
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## Circle if Applicable:

## Signature(s):

MS/MSD	Duplicate ID No.:	<u>OK-JF</u>
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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SS 013-0002Sample Location: 23SB 013Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1500</u>	0-2	<u>LI BRN</u>	<u>Silty sand</u>
Method: <u>Hand Auger</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>4 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 1.9'

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

AK - SP



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SS 014-0002Sample Location: 23SB 014Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/31/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1615</u>	0-2	BRW	Silty Sand
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	X	
Metals	1 4oz	X	
PAHs	1 4oz	X	
PCBs	1 4 oz	X	
TPH	1 40 ml VOA	X	
Sulfate/pH	1 4 oz	X	
TOC	4 4oz	X	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at .5' location on hillside  
near picnic area. Thin veneer  
of soil of Bedrock.

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 23SS 015-0002Sample Location: 23SB 015

Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/31/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1600</u>	0-2	<u>LT</u> <u>BRN</u>	<u>Silty Sand</u>
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz <u>15ml</u>	<u>X</u>	
PAHs	1 4oz <u>15ml</u>	<u>X</u>	
PCBs	1 4 oz <u>15ml</u>	<u>X</u>	
TPH	1 40 ml VOA <u>15ml</u>	<u>X</u>	
Sulfate/pH	1 4 oz <u>15ml</u>	<u>X</u>	
<del>TOC</del>	<del>1 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at <u>.8'</u>	

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_

RK - SJP





## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 23SS 0810-0002Sample Location: 23SB 016

Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/31/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1630</u>	0-2	<u>DK BRN</u>	<u>Sand</u>
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz <u>15ml</u>	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA <u>15ml</u>	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>1 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at

.3'. Bullet casing  
found near location.

## Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

## Signature(s):



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name:	NSA Crane SWMU 23	Sample ID No.:	23SS <u>007-0002</u>
Project No.:	112G03539	Sample Location:	23SB <u>017</u>
<input checked="" type="checkbox"/> Surface Soil <input type="checkbox"/> Subsurface Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Other: <input type="checkbox"/> QA Sample Type:		Sampled By:	KL, JF, JG
		C.O.C. No.:	
		Type of Sample:	<input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration

## GRAB SAMPLE DATA:

Date:	<u>10/31/12</u>	Depth Interval		Color		Description (Sand, Silt, Clay, Moisture, etc.)
Time:	<u>1645</u>					
Method:	Hand Auger	0-2		<u>LT</u> <u>BRN</u>		<u>Silty Sand</u>
Monitor Reading (ppm NA)						

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>1 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at <u>1.3'</u>	

## Circle if Applicable:

## Signature(s):

MS/MSD	Duplicate ID No.:	<u>96-89p</u>
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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name:	NSA Crane SWMU 23	Sample ID No.:	23SS <u>048-0002</u>
Project No.:	112G03539	Sample Location:	23SB <u>018</u>
<input checked="" type="checkbox"/> Surface Soil <input type="checkbox"/> Subsurface Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Other: <input type="checkbox"/> QA Sample Type:		Sampled By:	KL, JF, JG
		C.O.C. No.:	
		Type of Sample:	<input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration

## GRAB SAMPLE DATA:

Date: <u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1030</u>	0-2	DK BRN	silty Sand
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	X	
Metals	1 4oz	X	
PAHs	1 4oz	X	
PCBs	1 4 oz	X	
TPH	1 40 ml VOA	X	
Sulfate/pH	1 4 oz	X	
TOC	1 4 oz	X	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at <u>1.6'</u>		Signature(s): <u>OK Sp</u>
Circle if Applicable:	Duplicate ID No.:	
MS/MSD		



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 23SS 069-0002Sample Location: 23SB 019

Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1215</u>	0-2	<u>LT</u> <u>BKN</u>	<u>Silty Clay</u>
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>4 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 2.01'

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

DK-SP



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SS 020-0002Sample Location: 23SB 020Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>11/01/12</u>	<u>0-2</u>	<u>B RN</u>	<u>Silty Sand</u>
Time: <u>1:30</u>			
Method: <u>Hand Auger</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>4 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 1.6'

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_

K-SP





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 23SS 021-0002

Sample Location: 23SB

Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1200</u>	0-2	BRN	Silty Sand
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<input checked="" type="checkbox"/>	
Metals	1 4oz	<input checked="" type="checkbox"/>	
PAHs	1 4oz	<input checked="" type="checkbox"/>	
PCBs	1 4 oz	<input checked="" type="checkbox"/>	
TPH	1 40 ml VOA	<input checked="" type="checkbox"/>	
Sulfate/pH	1 4 oz	<input checked="" type="checkbox"/>	
TOC	4 4 oz	<input checked="" type="checkbox"/>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at

2.1'

## Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

## Signature(s):





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23

Project No.: 112G03539

Sample ID No.: 23SS 022-0002

Sample Location: 23SB

Sampled By: KL, JF, JG

C.O.C. No.:

☒ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other:☐ QA Sample Type:

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>11/01/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1530</u>	0-2	BRN	Silty Sand
Method: Hand Auger			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	X	
Metals	1 4oz	X	
PAHs	1 4oz	X	
PCBs	1 4 oz	X	
TPH	1 40 ml VOA	X	
Sulfate/pH	1 4 oz	X	
TOC	4 4 oz	X	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at 1.8'

## Circle if Applicable:

MS/MSD

Duplicate ID No.:

## Signature(s):



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name:	NSA Crane SWMU 23	Sample ID No.:	23SS <u>083-0002</u>
Project No.:	112G03539	Sample Location:	23SB <u>023</u>
<input checked="" type="checkbox"/> Surface Soil		Sampled By:	KL, JF, JG
<input type="checkbox"/> Subsurface Soil		C.O.C. No.:	
<input type="checkbox"/> Sediment		Type of Sample:	
<input type="checkbox"/> Other:		<input type="checkbox"/> Low Concentration	
<input type="checkbox"/> QA Sample Type:		<input type="checkbox"/> High Concentration	

## GRAB SAMPLE DATA:

Date:	<u>11/01/12</u>	Depth Interval		Color		Description (Sand, Silt, Clay, Moisture, etc.)
Time:	<u>4:00</u>					
Method:	Hand Auger					
Monitor Reading (ppm NA)		0-2		<u>LT</u> <u>BEN</u>		<u>Silty Sand</u>

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA	<u>X</u>	
Metals	1 4oz	<u>X</u>	
PAHs	1 4oz	<u>X</u>	
PCBs	1 4 oz	<u>X</u>	
TPH	1 40 ml VOA	<u>X</u>	
Sulfate/pH	1 4 oz	<u>X</u>	
<del>TOC</del>	<del>1 4 oz</del>	<u>X</u>	

## OBSERVATIONS / NOTES:

## MAP:

Refusal at <u>2.0</u>	
-----------------------	--

## Circle if Applicable:

## Signature(s):

MS/MSD	Duplicate ID No.:	<u>OK - JF</u>
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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SB0290906Sample Location: 23SB024aSampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/7/12</u>	<u>4-6</u>	<u>BRN</u>	<u>Silty Clay</u>
Time: <u>1550</u>			
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Gravel 0-4 No Surface Sample

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23S130240608Sample Location: 23S13024Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/7/12</u>	<u>6-8</u>	<u>BRN</u>	<u>Silty clay</u>
Time: <u>1600</u>			
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
<del>TOC</del>	<del>1 4 oz</del>		

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):



Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
 Project No.: 112G03539

Sample ID No.: 23SB0250406  
 Sample Location: 23SB025  
 Sampled By: KL, JF, JG  
 C.O.C. No.: \_\_\_\_\_

- ☐ Surface Soil  
☒ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/7/12</u>	<u>4-6</u>	<u>BROWN</u>	<u>silty clay</u>
Time: <u>1540</u>			
Method: <u>PPI</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

0-4 gravel. No surface  
Soil sample

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.:



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
 Project No.: 112G03539

Sample ID No.: 23S130250608  
 Sample Location: 23S13025  
 Sampled By: KL, JF, JG  
 C.O.C. No.: \_\_\_\_\_

- ☐ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/7</u>	<u>6-8</u>	<u>BRN</u>	<u>Silty Clay</u>
Time: <u>1545</u>			
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.:





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
Project No.: 112G03539

Sample ID No.: 23SB026 0406  
Sample Location: 23SB026  
Sampled By: KL, JF, JG  
C.O.C. No.: \_\_\_\_\_

- ☐ Surface Soil  
☒ Subsurface Soil  
☐ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1030</u>	<u>4-6</u>	<u>BRN</u>	<u>Silty Clay</u>
Method: <u>DPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

MAP:

Strong fuel odor 4-6  
gravel 0-4'. No surface sample  
collected.

Circle if Applicable:

Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SR0260608Sample Location: 23SR026Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☒ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/7/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1035</u>	<u>6-8</u>	<u>BRN</u>	<u>Silty Clay</u>
Method: <u>PPT</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Slight fuel odor at 6-8'

## Circle if Applicable:

## Signature(s):

MS/MSD

Duplicate ID No.: \_\_\_\_\_



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SD001-006Sample Location: 230001Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☐ Subsurface Soil☐ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/8/12</u>	<u>0-6"</u>	<u>Ben</u>	<u>Sand some silt</u>
Time: <u>0900</u>			
Method: <u>Plastic funnel</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
<u>TPH</u>	<u>1 40 ml VOA</u>		
<u>Sulfate/pH</u>	<u>1 4 oz</u>		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

23FD100812-04

Signature(s):



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
Project No.: 112G03539

Sample ID No.: 2350002-0006  
Sample Location: 2350003  
Sampled By: KL, JF, JG  
C.O.C. No.:

- ☐ Surface Soil  
☐ Subsurface Soil  
☐ Sediment  
☐ Other:  
☐ QA Sample Type:

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/8/12	0-6"	13BN	Silty Sand
Time: 1050			
Method: Plastic trowel			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

## Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
Project No.: 112G03539

Sample ID No.: 23SD003-0006  
Sample Location: 23SD003  
Sampled By: KL, JF, JG  
C.O.C. No.: \_\_\_\_\_

- ☐ Surface Soil  
☐ Subsurface Soil  
☒ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/8</u>	<u>0-6"</u>	<u>BRN</u>	<u>silty sand</u>
Time: <u>1110</u>			
Method: <u>Plastic trowel</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	<u>1 40 ml VOA</u>		
Sulfate/pH	<u>1 4 oz</u>		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

## Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):





Tetra Tech

## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NSA Crane SWMU 23  
 Project No.: 112G03539

Sample ID No.: 23SD004-0006  
 Sample Location: 23SD004  
 Sampled By: KL, JF, JG  
 C.O.C. No.: \_\_\_\_\_

- ☐ Surface Soil  
☐ Subsurface Soil  
☒ Sediment  
☐ Other: \_\_\_\_\_  
☐ QA Sample Type: \_\_\_\_\_

Type of Sample:  
☐ Low Concentration  
☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/8/12</u>	<u>0-6"</u>	<u>BRN</u>	<u>Silty Sand</u>
Time: <u>1345</u>			
Method: <u>Plastic trowel</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
<del>TPH</del>	<del>1 40 ml VOA</del>		
<del>Sulfate/pH</del>	<del>1 4 oz</del>		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

Signature(s):

MS/MSD

Duplicate ID No.:





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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SD005-0006Sample Location: 23SD005Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☐ Subsurface Soil☒ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
<u>10/8/12</u>	<u>0-6"</u>	<u>BRN</u>	<u>Silty Sand</u>
Time: <u>1330</u>			
Method: <u>Plastic barrel</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
<del>TPH</del>	<del>1 40 ml VOA</del>		
<del>Sulfate/pH</del>	<del>1 4 oz</del>		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SD006-0006Sample Location: 23SD006Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☐ Subsurface Soil☒ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>12/8/12</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1320</u>	<u>0-6"</u>	<u>BRN</u>	<u>Silty Sand</u>
Method: <u>Plastic tunnel</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
<del>TPH</del>	<del>1 40 ml VOA</del>		
<del>Sulfate/pH</del>	<del>1 4 oz</del>		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):



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## SOIL &amp; SEDIMENT SAMPLE LOG SHEET

Page 1 of 1Project Site Name: NSA Crane SWMU 23Project No.: 112G03539Sample ID No.: 23SD008-0006Sample Location: 23SD008Sampled By: KL, JF, JG

C.O.C. No.: \_\_\_\_\_

☐ Surface Soil☐ Subsurface Soil☒ Sediment☐ Other: \_\_\_\_\_☐ QA Sample Type: \_\_\_\_\_

Type of Sample:

☐ Low Concentration☐ High Concentration

## GRAB SAMPLE DATA:

Date: <u>10/8/16</u>	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1400</u>	<u>0-1'</u>	<u>gray/Black</u>	<u>Silt/fuel residue</u>
Method: <u>Bucket/pipe</u>			
Monitor Reading (ppm NA)			

## COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

## SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	3 40ml VOA		
Metals	1 4oz		
PAHs	1 4oz		
PCBs	1 4 oz		
TPH	1 40 ml VOA		
Sulfate/pH	1 4 oz		
TOC	1 4 oz		

## OBSERVATIONS / NOTES:

## MAP:

Strong fuel odor from  
Oil/water Separator Sediment.  
put bucket on end of pipe

## Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

## Signature(s):

**ATTACHMENT 4**

# SURFACE WATER SAMPLE LOG SHEET



## SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name:		<u>NSA Canyon</u>		Sample ID No.: <u>23Swood1</u>	
Project No.:		<u>112G03539</u>		Sample Location: <u>23Swood1</u>	
				Sampled By: <u>Losekamp</u>	
				C.O.C. No.: _____	

<input checked="" type="checkbox"/> Stream	Type of Sample: <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration
<input type="checkbox"/> Spring	
<input type="checkbox"/> Pond	
<input type="checkbox"/> Lake	
<input type="checkbox"/> Other: _____	
<input type="checkbox"/> QA Sample Type: _____	

  
**SAMPLING DATA:**

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	ORP mV
<u>10/8/12</u>								
Time: <u>0905</u>								
Depth: <u>6 inches</u>								
Method: <u>peri pump</u>	<u>Clear</u>	<u>5.38</u>	<u>.079</u>	<u>14.1</u>	<u>37.1</u>	<u>8.31</u>	-	-

  
**SAMPLE COLLECTION INFORMATION:**

Analysis	Preservative	Container Requirements	Collected
<u>PMT's</u>	-	<u>2 6 Amber</u>	
<u>Metals / diss</u>	<u>HNO3</u>	<u>2 Plastic</u>	

  
**OBSERVATIONS / NOTES:**

	<b>XMAP:</b>
--	--------------

Circle if Applicable: MS/MSD      Duplicate ID No.: <u>23FD 100812-05</u>	Signature(s): 
--	-------------------

**OBSERVATIONS/NOTES:**



# SURFACE WATER SAMPLE LOG SHEET

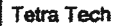
Page 7 of 7

[illegible]



**ATTACHMENT 4**

# SURFACE WATER SAMPLE LOG SHEET



## SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: <u>NSA Crane - Summ 23</u>		Sample ID No.: <u>23SW004</u>	
Project No.: <u>112603539</u>		Sample Location: <u>23SW004</u>	
		Sampled By: <u>Lasekamp</u>	
<input checked="" type="checkbox"/> Stream		C.O.C. No.: _____	
<input type="checkbox"/> Spring			
<input type="checkbox"/> Pond			
<input type="checkbox"/> Lake			
<input type="checkbox"/> Other: _____			
<input type="checkbox"/> QA Sample Type: _____			
Type of Sample:			
<input type="checkbox"/> Low Concentration			
<input type="checkbox"/> High Concentration			

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	ORP mV
<u>10/8/12</u>	<u>Clear</u>	<u>6.10</u>	<u>1.21</u>	<u>13.7</u>	<u>8.0</u>	<u>-</u>	<u>-</u>	<u>-</u>
Time: <u>1345</u>								
Depth: _____								
Method: _____								

Analysis	Preservative	Container Requirements	Collected

OBSERVATIONS / NOTES:	MAP:

<b>Circle if Applicable:</b>		<b>Signature(s):</b>
<input type="checkbox"/> MS/MSD	Duplicate ID No.: _____	

# SURFACE WATER SAMPLE LOG SHEET



Page 1 of 1

Project Site Name: <u>NYSACranes-Swamp</u>		Sample ID No.: <u>23Sw006</u>	
Project No.: <u>112G03539</u>		Sample Location: <u>23Sw006</u>	
		Sampled By: <u>Losa Camp</u>	
		C.O.C. No.: _____	

<input checked="" type="checkbox"/> Stream <input type="checkbox"/> Spring <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Other: _____ <input type="checkbox"/> QA Sample Type: _____	Type of Sample: <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration
--	--

SAMPLING DATA:								
Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	ORP mV
<u>10/3/12</u>								
Time: <u>1320</u>								
Depth: _____	<u>Clear</u>	<u>5.71</u>	<u>.041</u>	<u>13.71</u>	<u>13.2</u>	<u>6.11</u>	-	-
Method: _____								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected

OBSERVATIONS / NOTES:	MAP:

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	

## **A.2 SITE PHOTOGRAPHS**

## SWMU 23 – BATTERY SHOP BUILDING 36



**SITE:**  
NSA Crane –  
SWMU 23

**PHOTOGRAPHER:**  
K. Losekamp  
**VIEW:** Southwest

**DESCRIPTION:** Rear view of paved area at Building 36.

#1  
01/22/13



**SITE:**  
NSA Crane –  
SWMU 23

**PHOTOGRAPHER:**  
K. Losekamp  
**VIEW:** Northeast

**DESCRIPTION:** Rear view of paved area at Building 36.

#2  
01/22/13



## SWMU 23 – BATTERY SHOP BUILDING 36

**SITE:**

NSA Crane –  
SWMU 23

**PHOTOGRAPHER:**

K. Losekamp  
**VIEW:** Northeast

**DESCRIPTION:** Geophysical survey utilizing ground penetrating radar in the area of the suspected UST at Building 36.

#3

01/22/13

**SITE:**

NSA Crane –  
SWMU 23

**PHOTOGRAPHER:**

K. Losekamp  
**VIEW:** Northeast

**DESCRIPTION:** Geophysical survey EM61 in the area of the suspected UST at Building 36.

#4

01/22/13



## SWMU 23 – BATTERY SHOP BUILDING 36

### NSA CRANE

**SITE:**

NSA Crane –  
SWMU 23

**PHOTOGRAPHER:**

K. Losekamp

**VIEW:** Southeast

**DESCRIPTION:** View of headwall near sample location 23SB010.

#5

10/29/12

**SITE:**

NSA Crane –  
SWMU 23

**PHOTOGRAPHER:**

K. Losekamp

**VIEW:** Southeast

**DESCRIPTION:** Close up view of headwall near sample location 23SB010.

#6

10/29/12



## SWMU 23 – BATTERY SHOP BUILDING 36

### NSA CRANE

**SITE:**

NSA Crane –  
SWMU 23

**PHOTOGRAPHER:**

K. Losekamp  
**VIEW:** Southeast

**DESCRIPTION:** Close up view of headwall near sample location 23SB009.

#7

10/29/12

**SITE:**

NSA Crane –  
SWMU 23

**PHOTOGRAPHER:**

K. Losekamp  
**VIEW:** South

**DESCRIPTION:** View of oil/water separator located at the southwest corner of Building 36.

#8

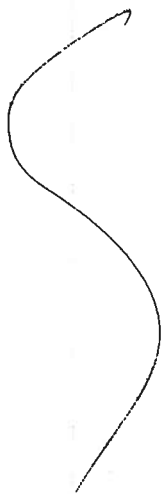
10/29/12

### **A.3 GEOPHYSICAL FIELD NOTES**

12  
November 5<sup>th</sup>

0830: KL + BR (w/ survey) onsite  
to survey all points.

1230: All points surveyed.



KL

13  
1/22/13 NSA Crane/Tt

Sunny, very cold temps near 0°F  
(high 15°F)  
Tt: Jim Coffman and  
Kevin Losekamp at visitor's  
pass office @ 0830 to  
obtain badge for Coffman.

Proceed to job trailer (Tt)  
and to see Tom Brent  
(Enl Coord.)

Loadup auxiliary survey  
equipment & head to SUMV23  
for geophysical survey today.

Geophysical Survey Obj: Search  
for possible UST (steel)  
shown on historical plans

Establish 30' x 70' survey (grid)  
area - 5 ft. marks - for geophys  
survey around plan UST location  
using 2.5 ft line spacing.  
Perform EM61-MK2 survey  
over grided survey area  
after manufacturer's recommended setup.

1/22/13 NSA Crane/TB

Geonics **EM61** wheel mode (0.61')

## Differential Mode Data

0E	0N	70N
2.5E	70N	0N
5E	0N	70N
7.5E	70N	0N
10E	0N	70N
12.5E	70N	0N
15E	0N	70N
17.5E	70N	0N
20E	0N	70N
22.5E	70N	0N
25E	0N	70N
27.5E	70N	0N
30E	70N	20N

End next to bollard  
for gas meter

GPR survey conducted across grid

**GPR**

GPR system GSSI SIR 2000  
system equipped with 400 MHz  
antenna. 32 scans/s, 60ns  
time window set, manufacturer's  
recommendations followed for  
calibrations/setup. Slow walking pace  
for survey.

**GPR**

#.ile	Line	Start	End
1	0	0N	70N M's on 10s
2	2.5E	"	"
3	5E	"	"
4	7.5E	"	"
5	10E	"	"
6	12.5E	"	"
7	15E	"	"
8	17.5E	"	"
9	20E	3N	70N
10	22.5E	2N	70N
11	25E	0N	70N
12	27.5E	0N	70N
13	30E	0N	70N
14	2.5N	32.5E	2.5W M's 10 from start (22.5/12.5/2.5)
15	5N	"	"
16	7.5N	30E	" SP bollard
17	10N	30E	"
18	12.5N	30E	"
19	15N	"	"
20	17.5N	"	"
21	20N	32.5E	"

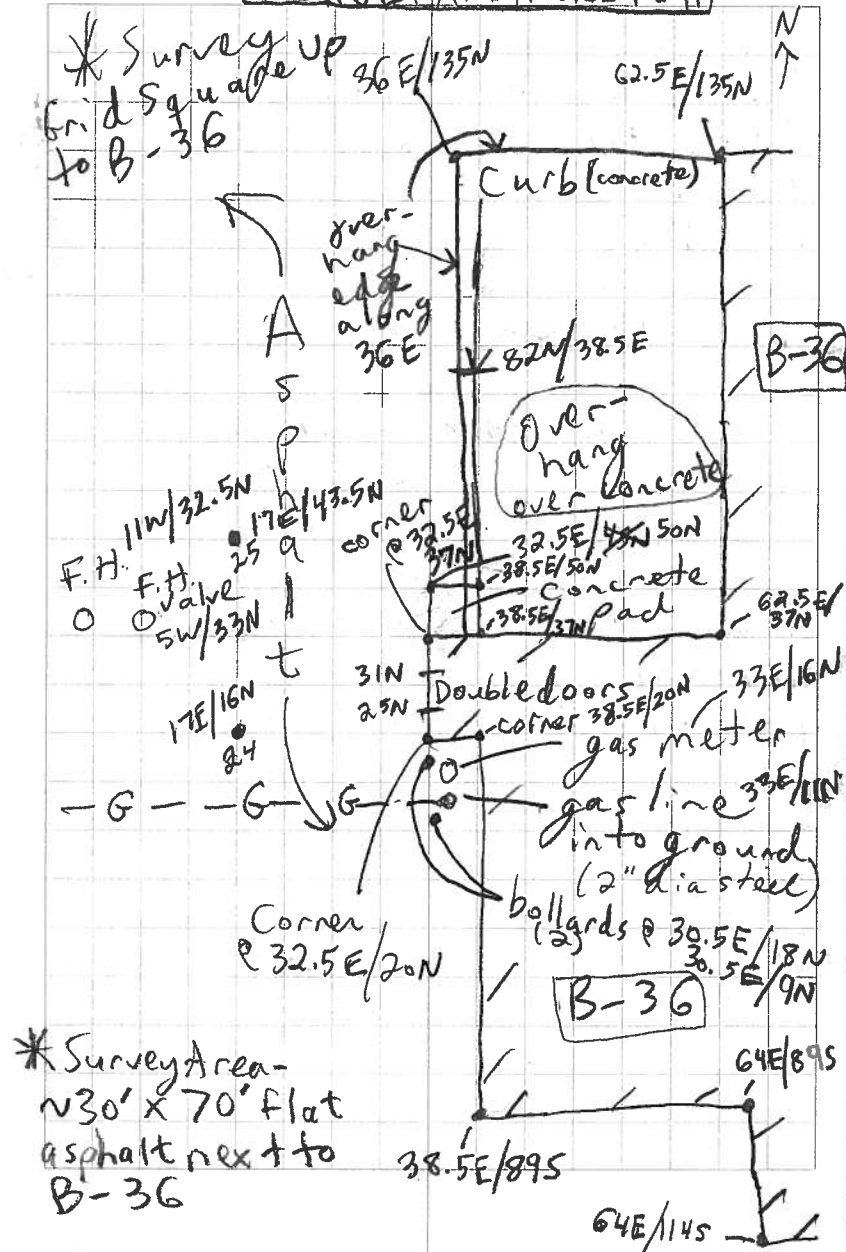
NSA Crane / Tt

GPR

File	Line	Start	End
22	22.5N	32E	2.5W
23	25N	32E	2.5W
24	27.5N	"	"
25	30N	"	"
26	32.5N	"	"
27	35N	"	"
28	37.5N	32.5E	2.5W
29	40N	"	"
30	42.5N	"	"
31	45N	"	"
32	47.5N	"	"
33	50N	"	"
34	52.5N	"	"
35	55N	"	"
36	57.5N	"	"
37	60N	"	"
38	62.5N	"	"
39	65N	"	"
40	67.5N	"	"
41	70N	"	"

\* A Schonstedt GA 72 magnetic locator survey was conducted to cover the survey grid and no large ferrous subsurface objects were detected. Golnogo test ✓

## SURVEY AREA SKETCH





1/22/13 NSA Crane/Tt

About a 1 hr delay today  
in starting geophysical survey  
due to a slow wait for  
building tenant to move  
oversized fork lift out of  
way for survey to be conducted.

Geophysical equipment packed,  
site sketch and survey tie in  
completed by about 4:30 pm  
and head off site for FedEx  
dropoff of geophysical  
survey equipment in  
Bloomington.

JAC

MAY 18, 2013 (SATURDAY)

NSA CRANE SITE 23

AT SITE: STC/CR

AM: CLOUDY, WARM (LT RAIN)

PM: " "

NOTE:

ORIGINAL ENTRIES MADE IN NB1460  
PAGE 111. AFTER WORK AT UXO 7.  
STC/CR WENT TO SITE 23.

1415: AT SITE FOR PAH SAMPLING  
USING DPT RIG TO TAKE SAMPLES  
DUE TO HARD GRAVEL/ASPHALT  
AT SURFACE. DRILLED 3 BORINGS  
USING DPT RIG TO  $\pm 4'$ . SEE  
BORING LOGS FOR DETAILS. SEE  
SAMPLE LOG SHEETS AND COES  
FOR SAMPLES TAKEN

1530: DONE WITH BORINGS AND  
RETURN TO SITE TRAILER

1600: AT TRAILER - PLACE ICE ON  
SAMPLES AND PREPARE FOR  
SUNDAY'S WORK.

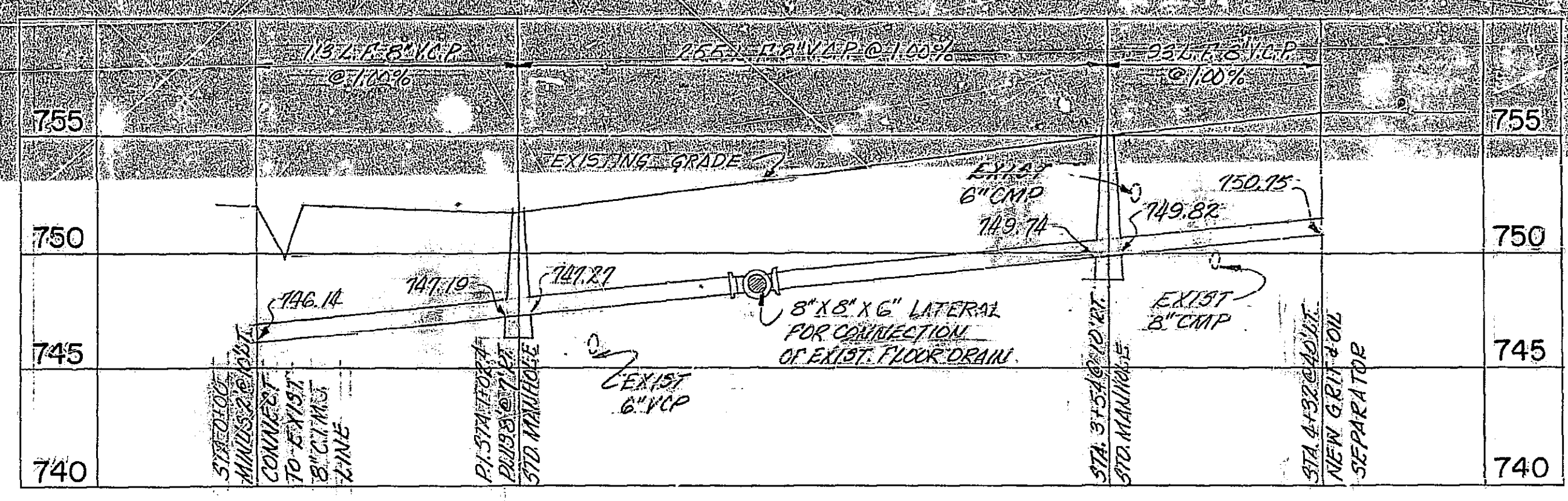
STC.



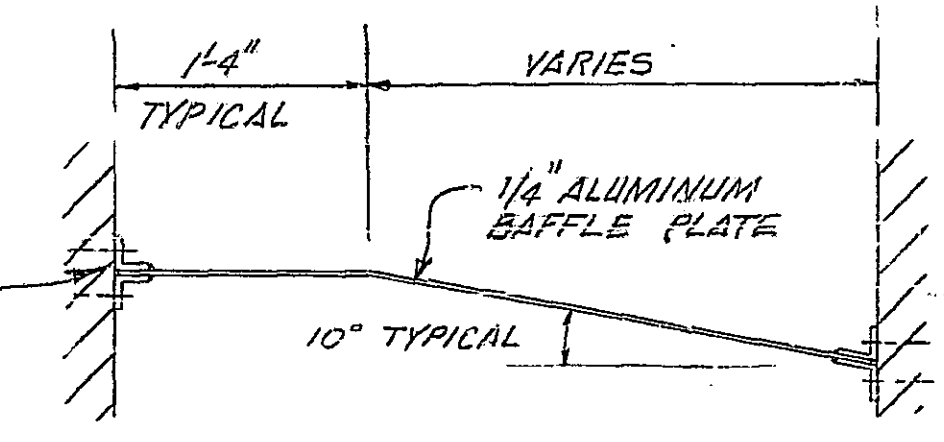
#### **A.4 BUILDING 36 SITE DRAWINGS**



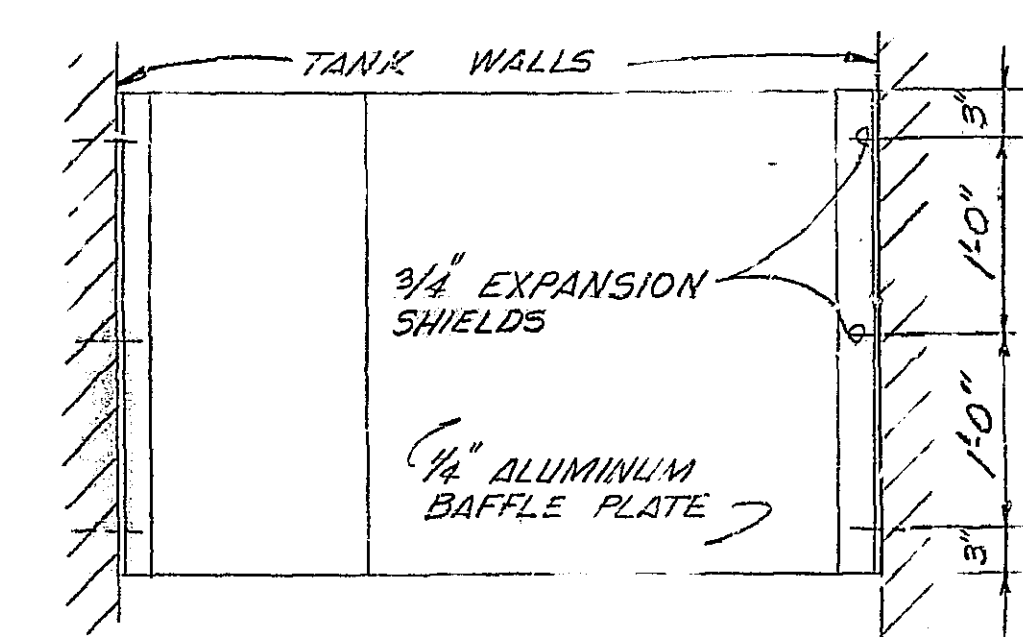
REVISIONS		DESCRIPTION	PREP'D BY	DATE	APPROVED
1	REVISED & BUILT	HYDRAULIC LOCATION OF 8" C.I.P. FROM STA. 1+00 TO STA. 1+02.4	W. J. STEEG	11/10/73	REJ
2	ELIMINATED CONC. CURB FROM WASH. RACK		W. J. STEEG	11/10/73	REJ
3	RELOCATED NEW OIL GRIT SEPARATOR		W. J. STEEG	11/10/73	REJ



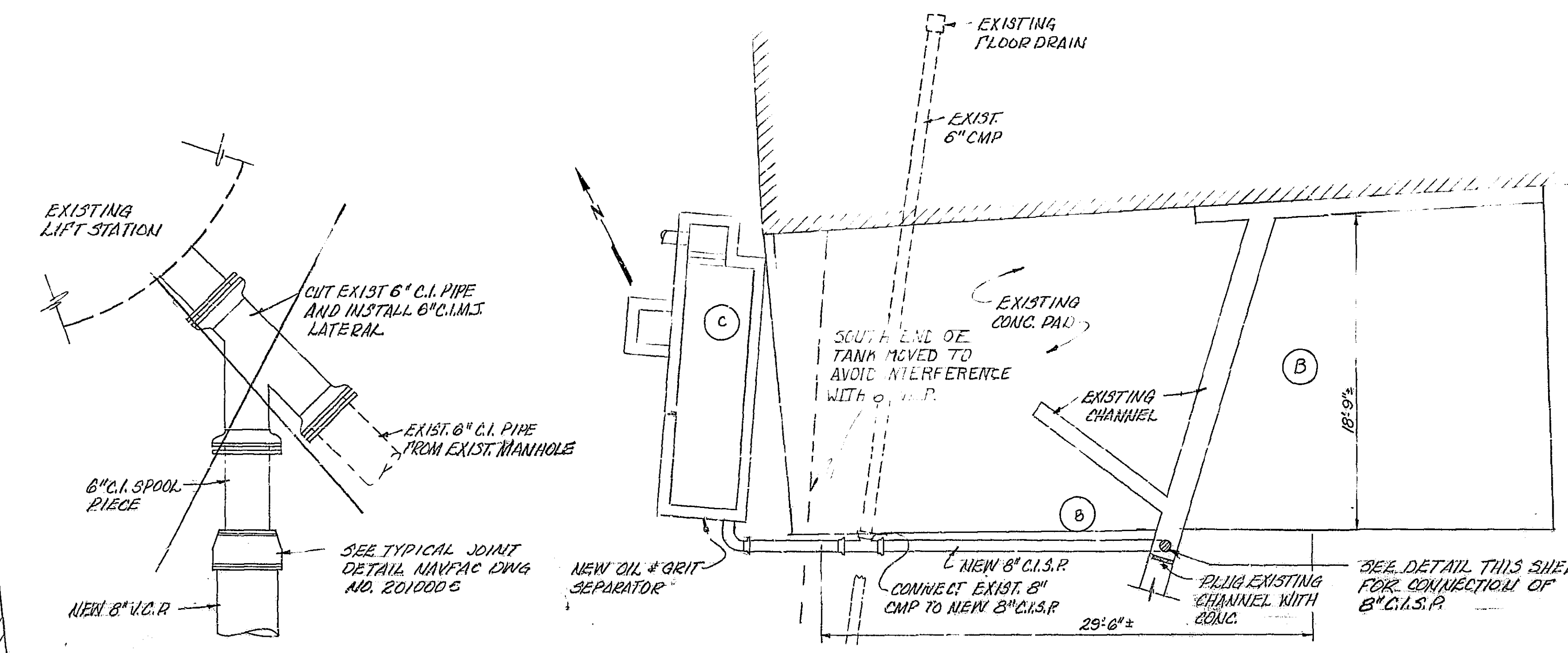
**SEWER PROFILE**  
SCALE: 1"=50' HORIZ.  
1"=5' VERT.



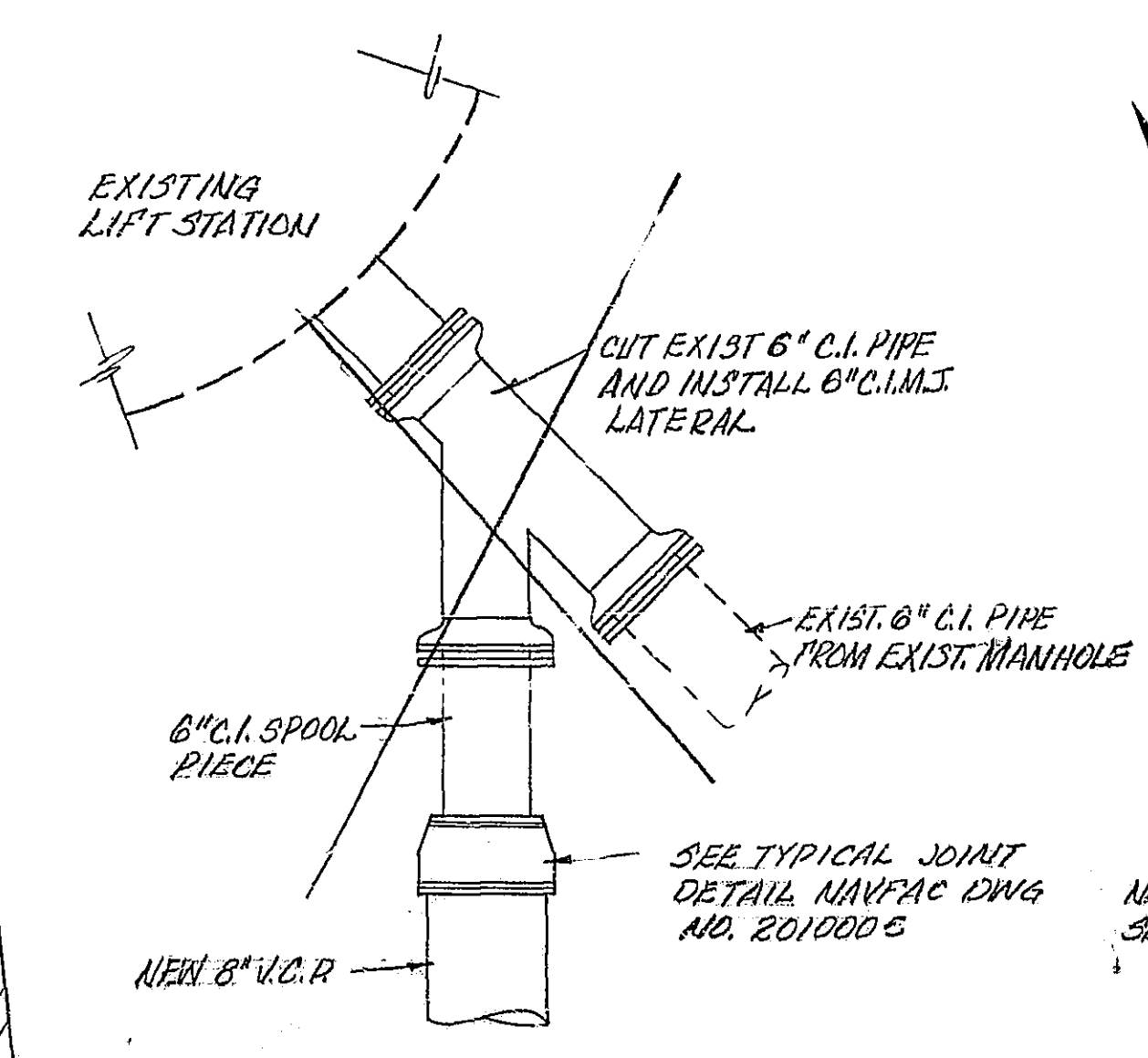
**PLAN**



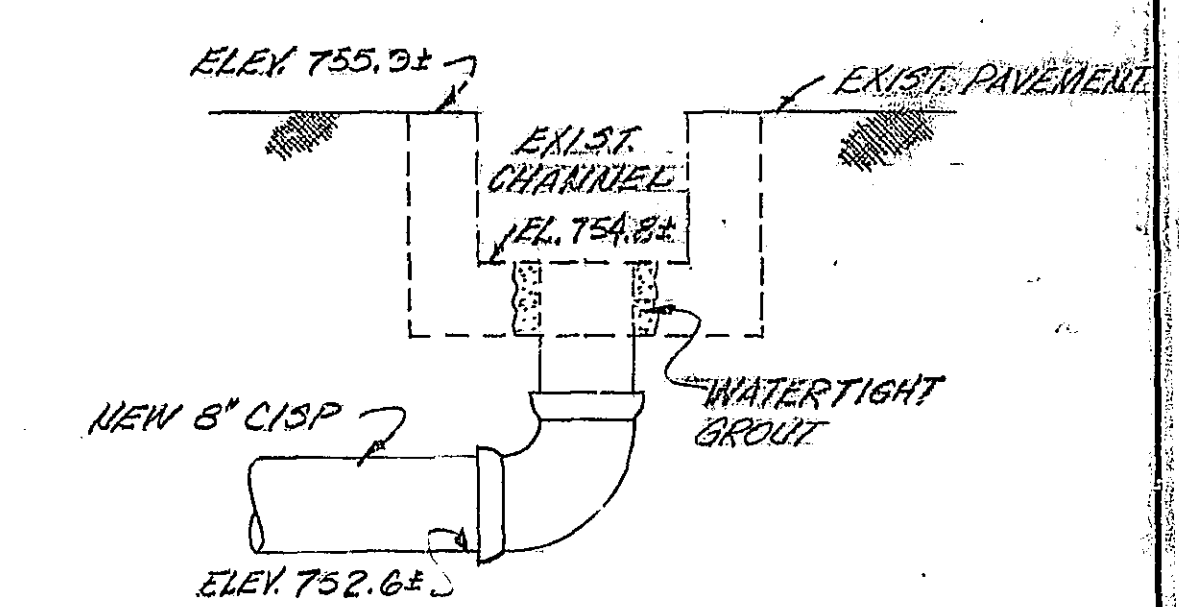
**ELEVATION**  
**TYPICAL BAFFLE DETAIL**  
SCALE: 1"=1'-0"



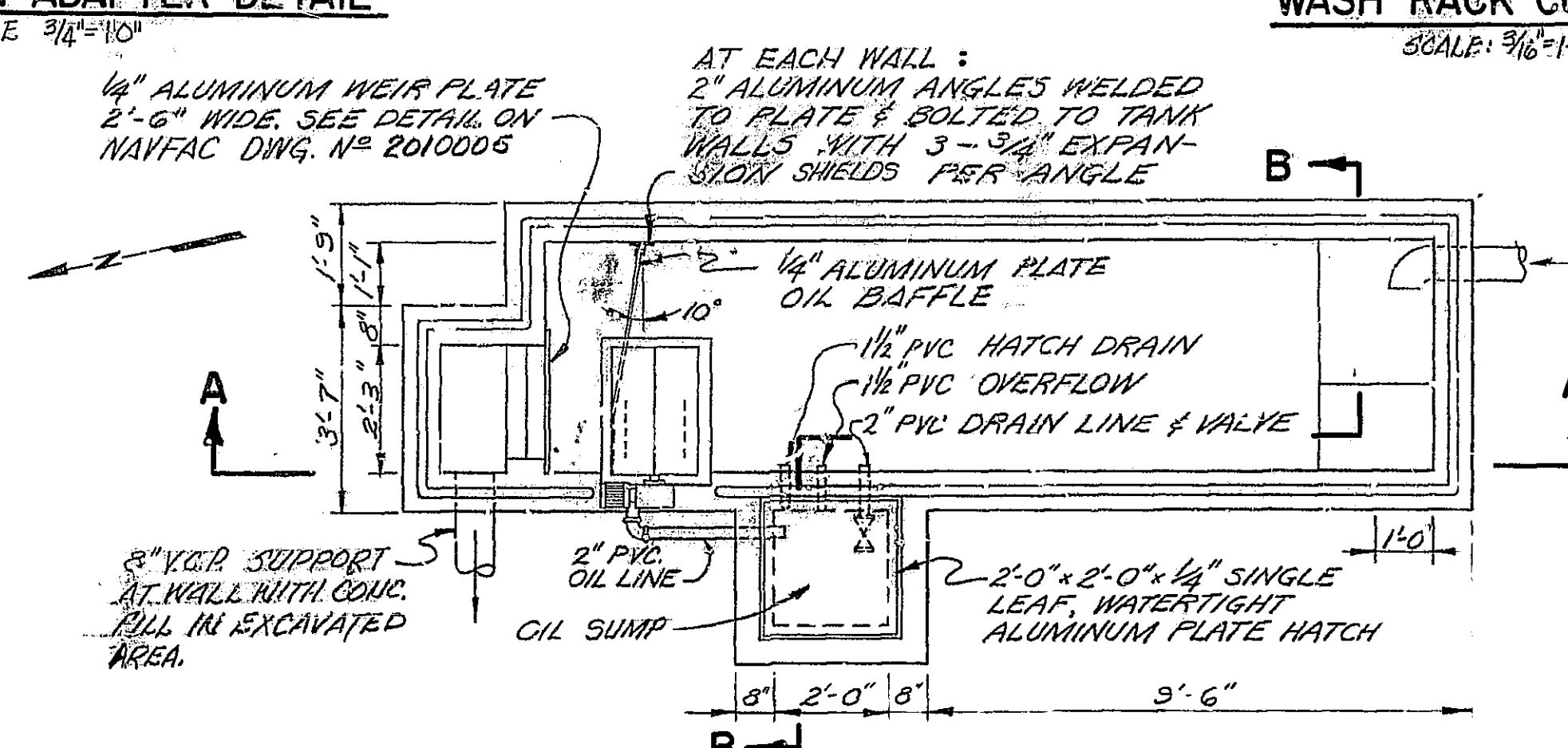
**WASH RACK CURB PLAN**  
SCALE: 3/8"=1'-0"



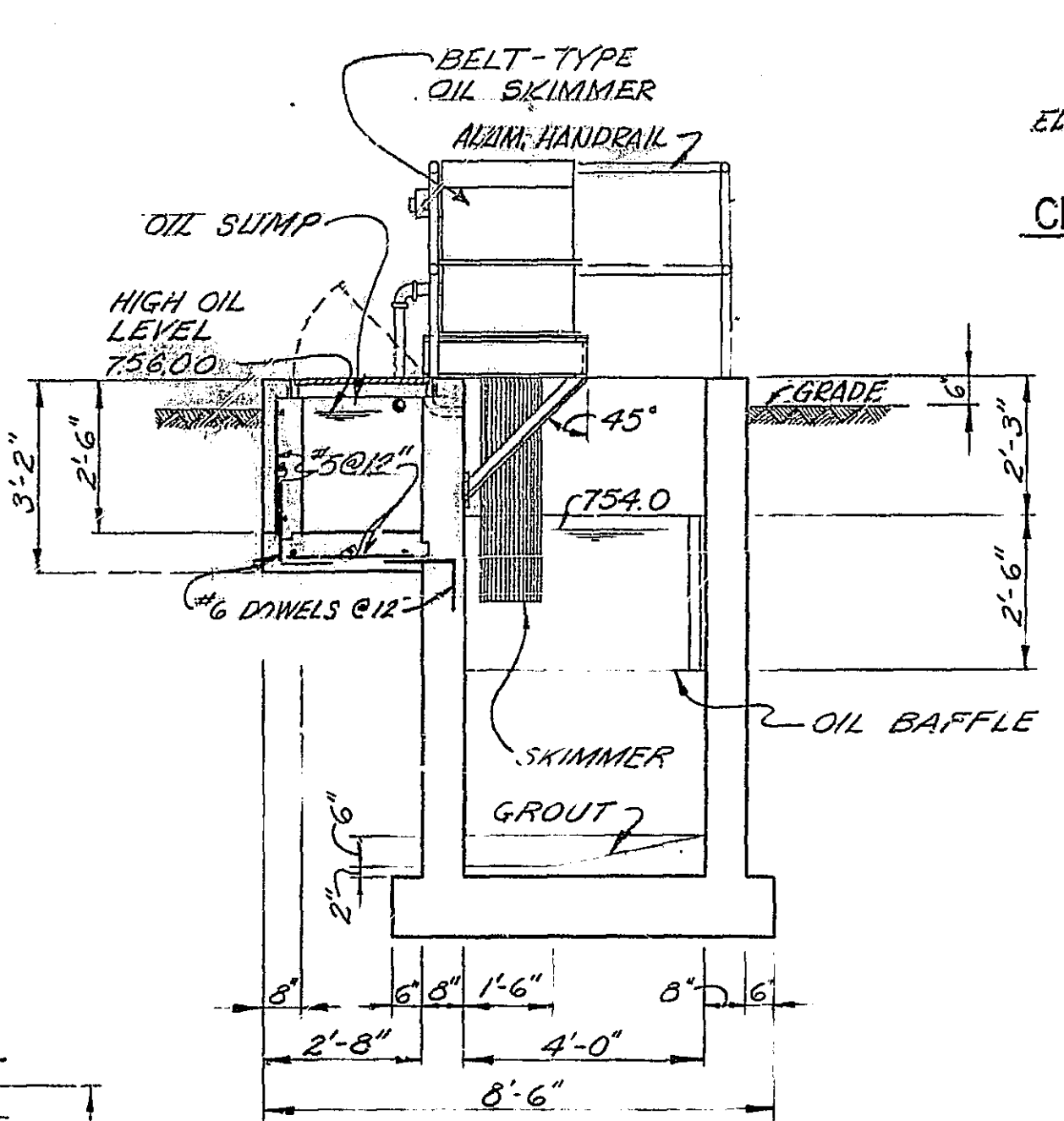
**CONNECTION ADAPTER DETAIL**  
SCALE: 3/4"=1'-0"



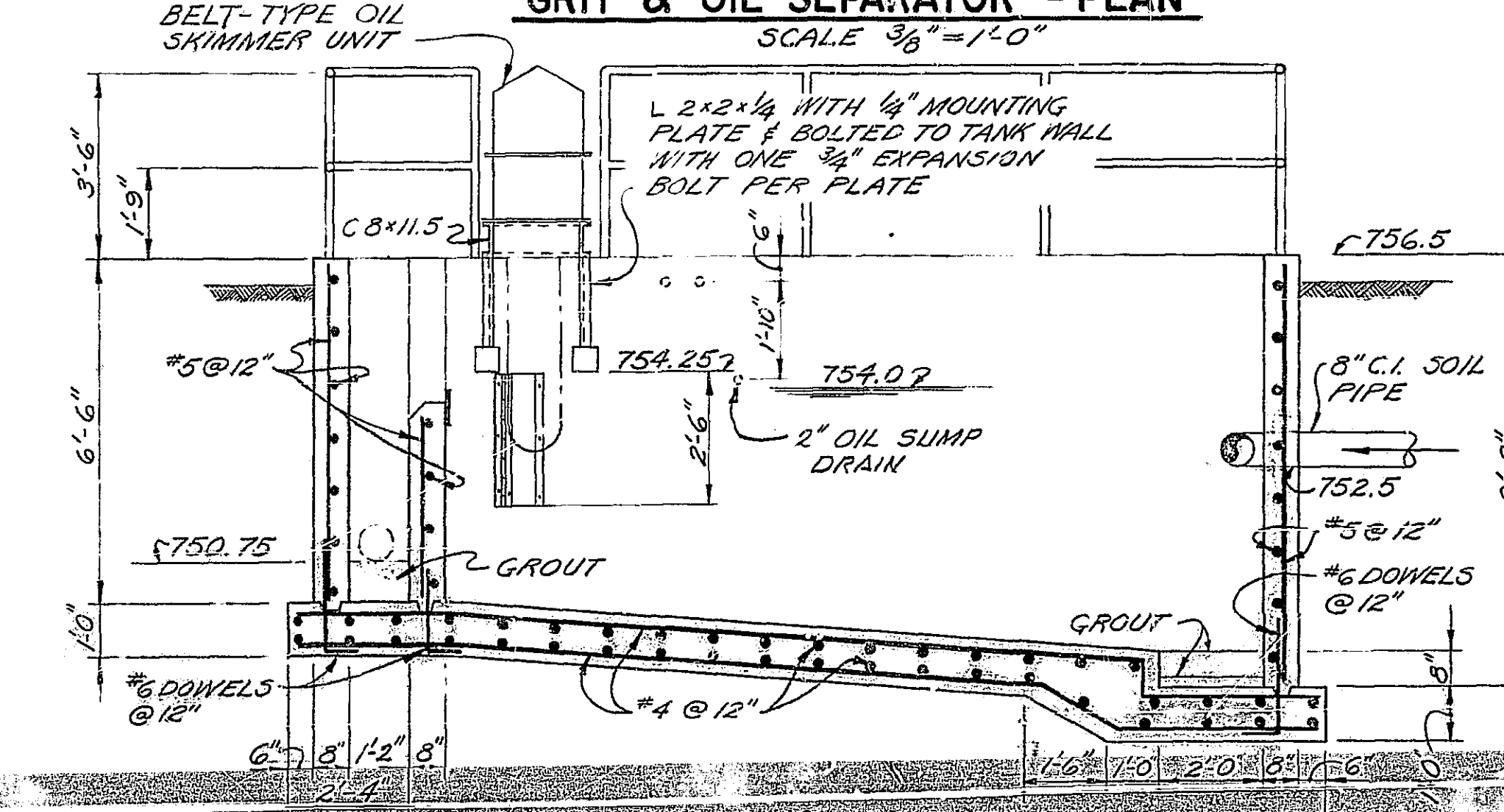
**CHANNEL CONNECTION DETAIL**  
NO SCALE



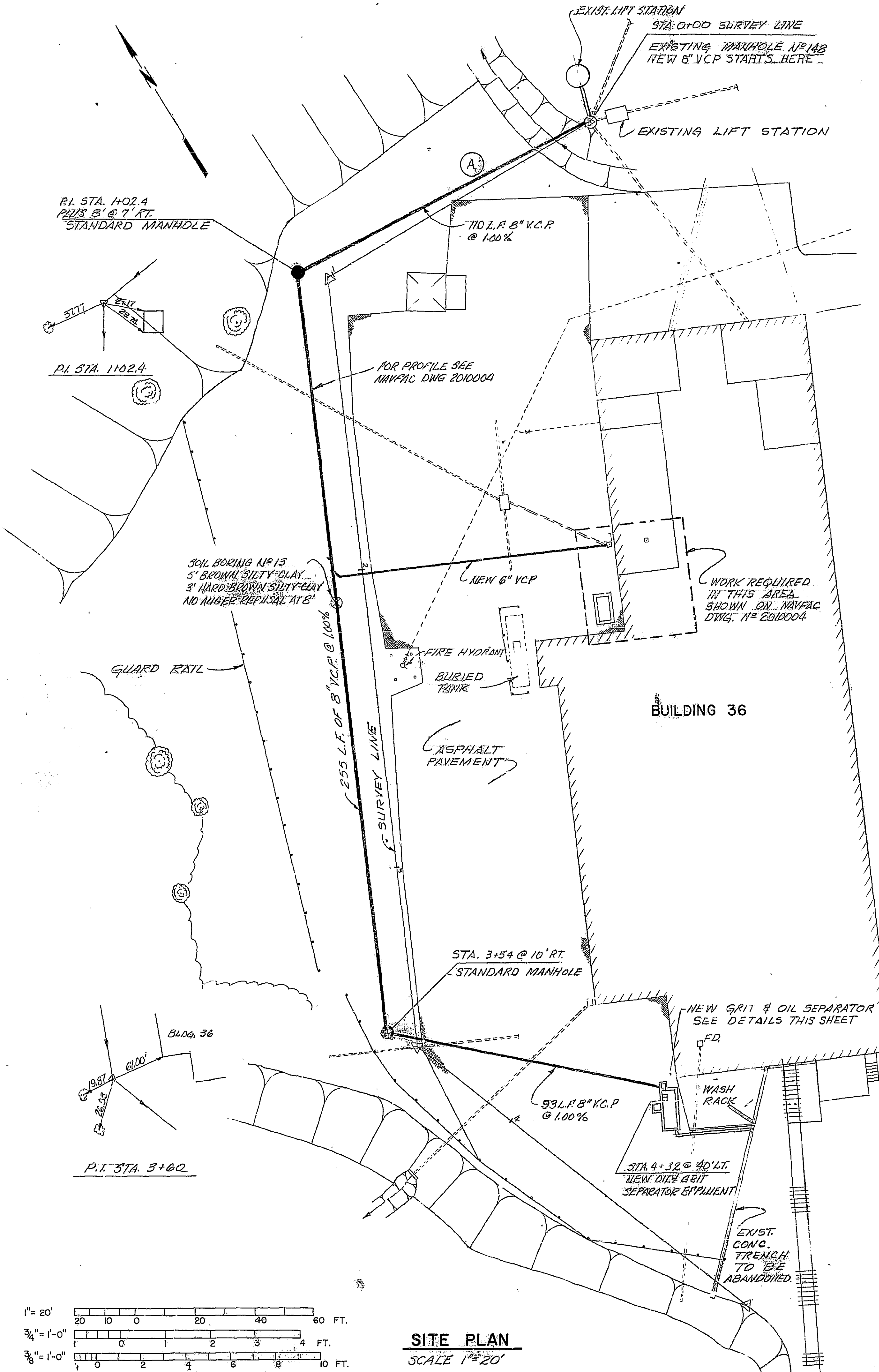
**GRIT & OIL SEPARATOR - PLAN**  
SCALE: 3/8"=1'-0"



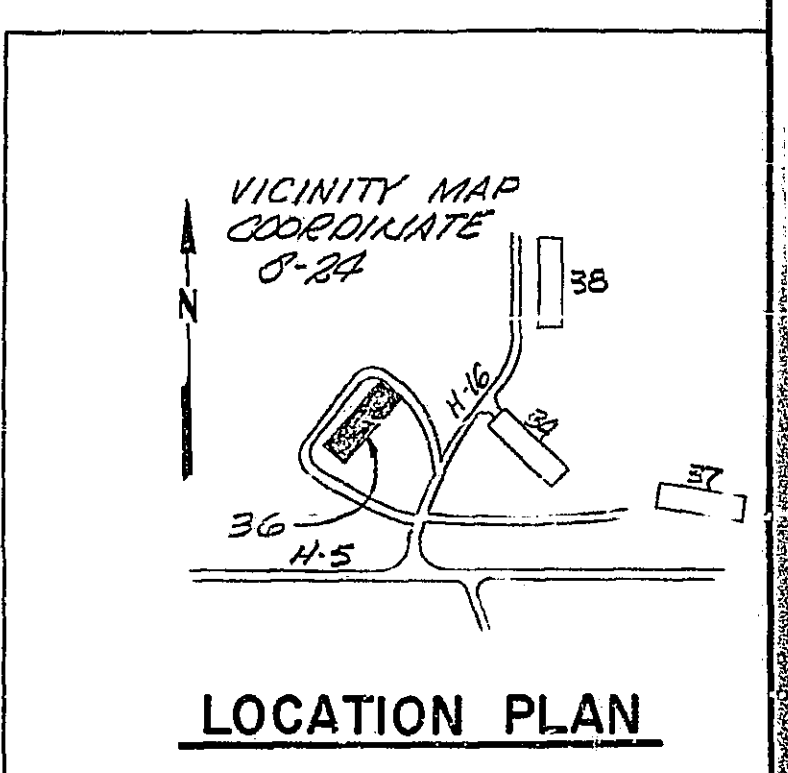
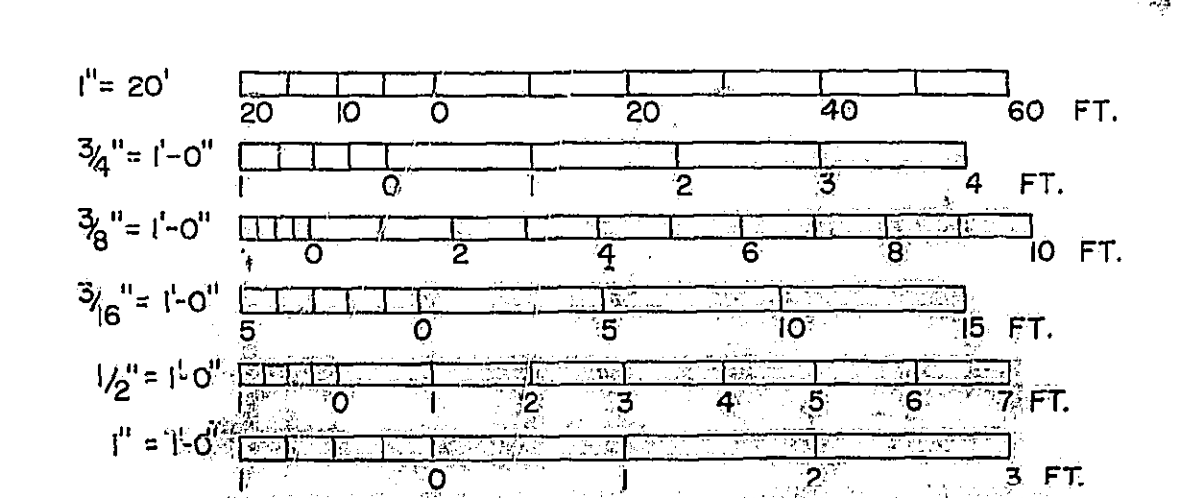
**SECTION "B-B"**  
SCALE: 3/8"=1'-0"



**SECTION "A-A"**  
SCALE: 3/8"=1'-0"



**SITE PLAN**  
SCALE: 1"=20'



**LOCATION PLAN**

**PW. 3820**

DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND  
NORTH DIVISION  
NAVAL AMMUNITION DEPOT  
INDUSTRIAL WASTE  
TREATMENT FACILITIES  
BUILDING 36 - GRIT & OIL SEPARATOR  
NEUTRALIZATION EQUIP. & SEWER CONNECTION

APPROVED: [Signature] DATE: 11/10/73  
OFFICER IN CHARGE  
SPECIAL AGENT  
INDIANA

CONSTRUCTION CONTRACT NO. N62472-73-C30093  
SCALE: AS SHOWN  
SHEET 15 OF 29

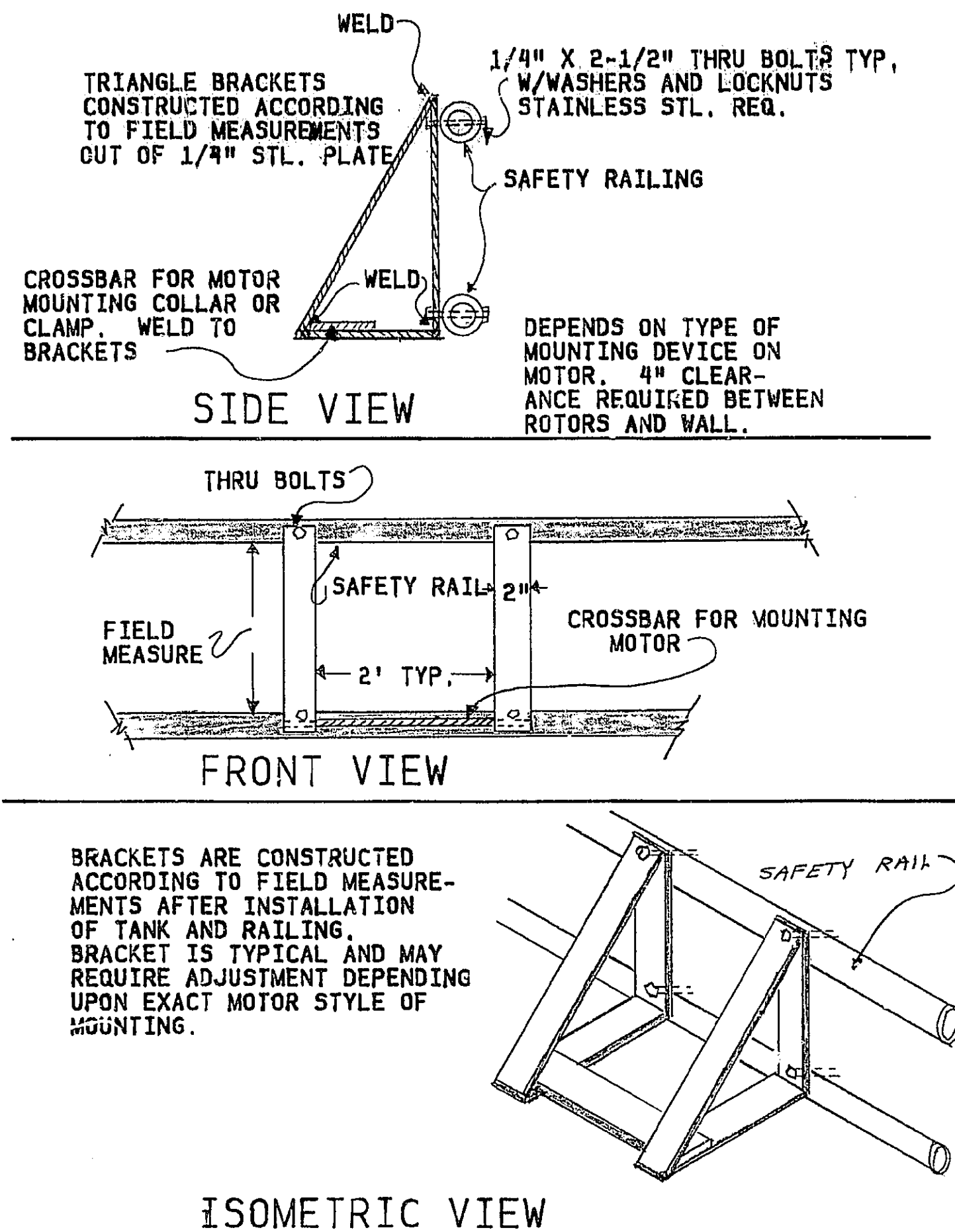


# NOTES

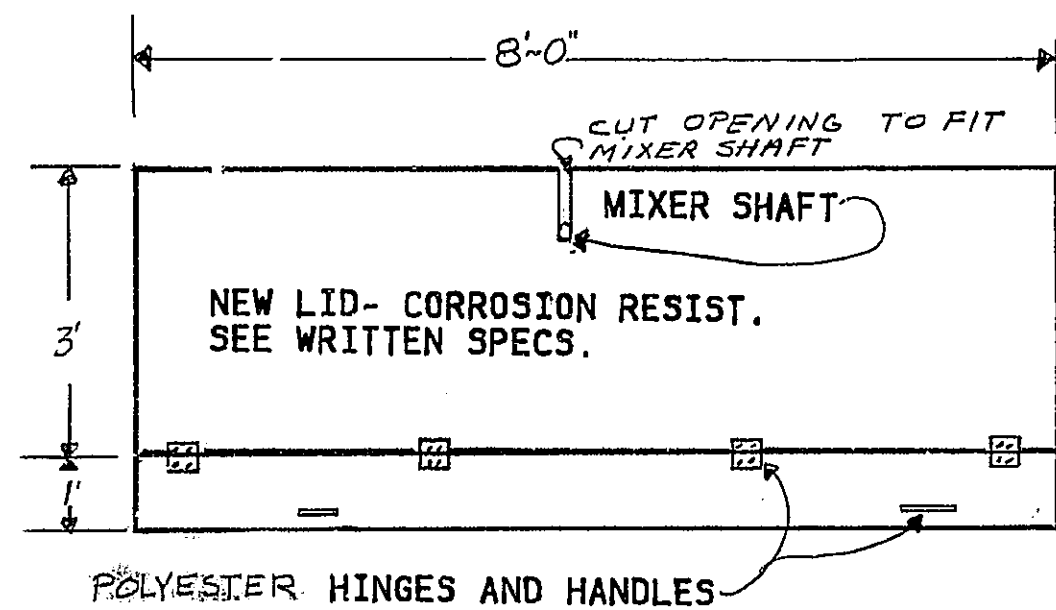
- DEMOLITION OF EXISTING TANK IS NECESSARY. NEW TANK IS TO BE CONSTRUCTED IN SAME LOCATION.
- NEW DRAINS AND PIPING SHALL BE INSTALLED AS NECESSARY TO PROVIDE NEW TANK COMPLETE AND READY FOR USE.
- PIPING IN NEW TANK SHALL BE THE SAME AS THAT IN THE ORIGINAL TANK BEFORE DEMOLITION.
- ANY PIPING OR DRAINS DAMAGED DURING TOTAL PROJECT SHALL BE REPLACED BY CONTRACTOR.
- DEMOLISHED MATERIALS SHALL BE REMOVED AND DISPOSED OF ACCORDING TO CODE 0924 (ENVIRONMENTAL DEPT.) INSTRUCTIONS.
- FIBERGLASS COATING SHALL BE APPLIED TO ALL TANK AND DUMP RAMP SURFACES TO PREVENT ACIDIC DAMAGE. REFER TO WRITTEN SPECIFICATIONS FOR FIBERGLASS REQUIREMENTS.
- LID IS TO BE CONSTRUCTED FROM REINFORCED FIBERGLASS OR EQUALLY ACID RESISTANT MATERIAL.
- COMBINATION STARTER SHALL HAVE PUSH BUTTON START, STOP, AND PILOT LIGHT.
- EXISTING SURFACE AROUND EXISTING TANK IS ASPHALT.
- EXISTING ASPHALT SHALL BE REMOVED PRIOR TO CONSTRUCTION OF DIKE, RAMP, AND SLAB. THE SLAB SITE SHALL BE PREPARED AS NECESSARY TO PROVIDE SOLID STABLE BASE FOR NEW CONCRETE.
- SURROUNDING GROUND AREA DISTURBED DURING DEMOLITION OR CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITION.
- CONTRACT IS TO INCLUDE ALL MATERIALS AND LABOR NECESSARY TO REMOVE AND REPLACE TANK AND DUMPING RAMP READY FOR USE, TO INSTALL NEW MIXER (CONTRACTOR PROVIDED), AND CONSTRUCTION SLAB, DIKE, AND VEHICLE RAMP (WITH DRAIN AND VALVE.)
- ONE METER OF SOIL IN ALL DIRECTIONS SHALL BE EXCAVATED FROM THE SITE OF THE EXISTING TANK. MATERIAL SHALL BE DISPOSED OF PER CONTRACTING OFFICER.

## MIXER NOTE

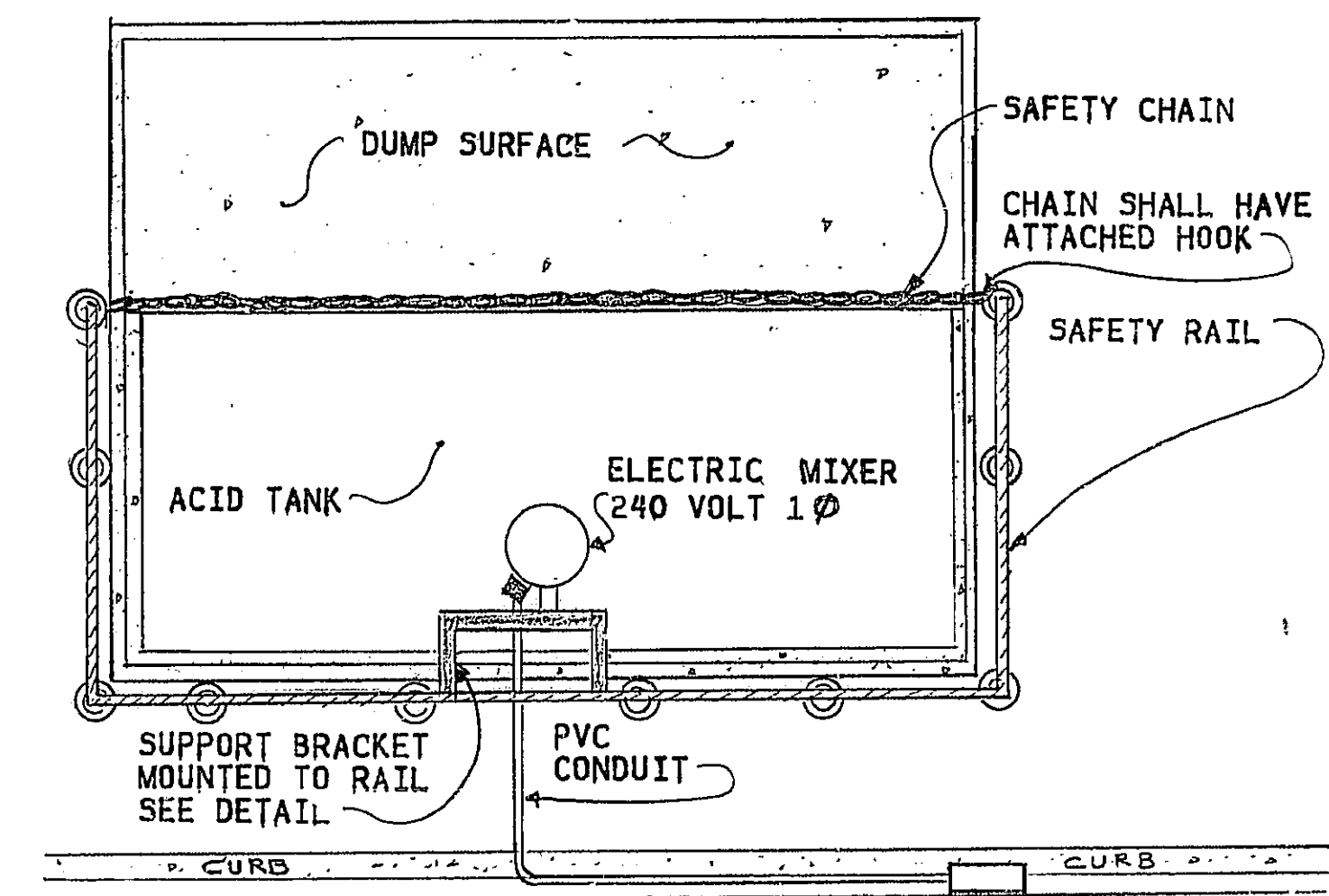
MIXER SHALL BE A DIRECT DRIVE, DUAL PROPELLER FOR LIGHT AND MEDIUM SOLUTIONS, WITH UNIVERSAL MOUNTING CLAMP. PROPELLERS AND SHAFT SHALL BE A MINIMUM OF 316 STAINLESS STEEL. SHAFT SHALL BE TYP. 48" LONG 3/4" DIAMETER WITH A 4" PROPELLER. MOTOR SHALL HAVE ALUMINUM HOUSING WITH VIBRATION PAD AND SHALL BE TOTALLY ENCLOSED FAN COOLED. MOTOR SHALL BE 240 VOLT 1 PHASE 1725 RPM 1/2 HP NEMA 56C FLANGE FRAME. OVERALL LENGTH SHALL APPROXIMATELY 68". MIXER SHALL BE DESIGNED FOR INTENDED USE.



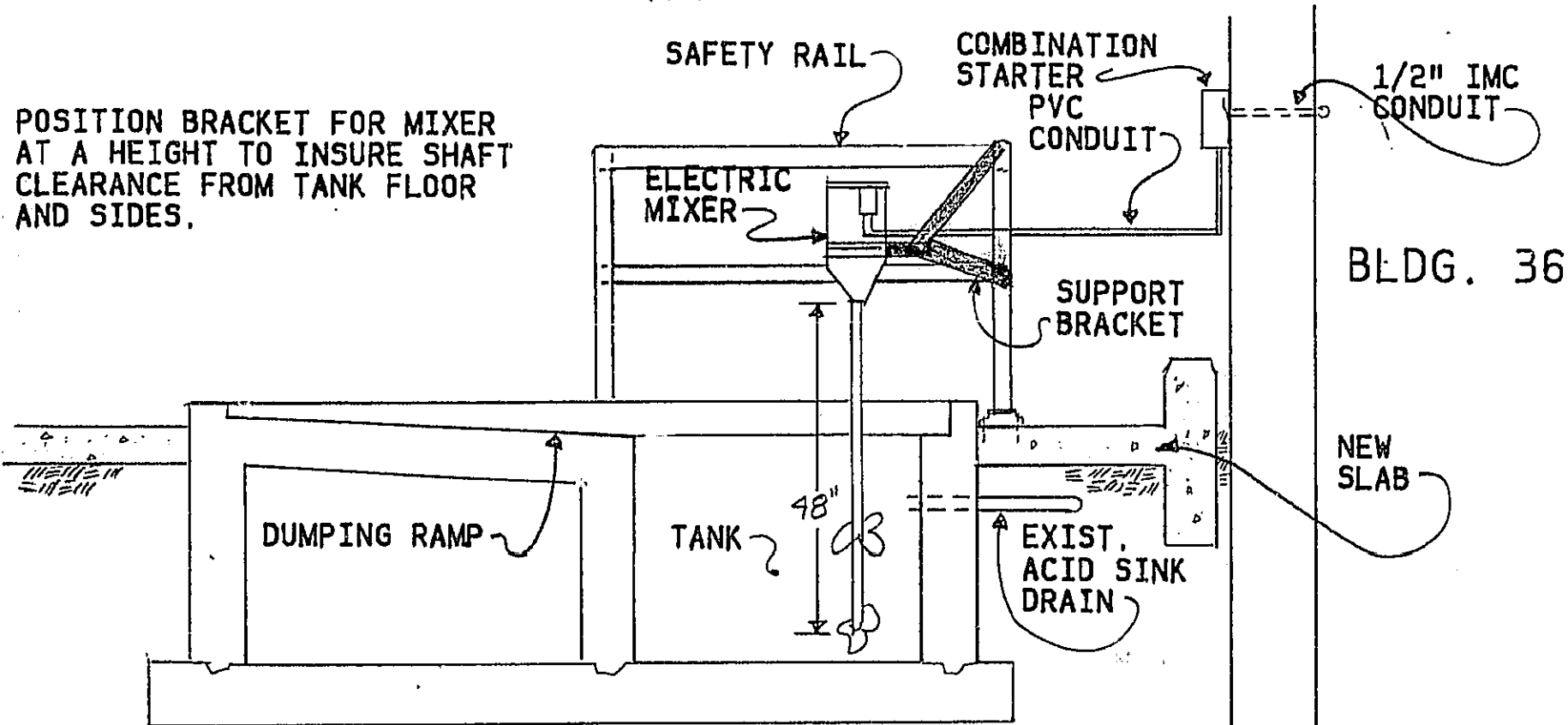
BRACKET DETAIL  
NO SCALE



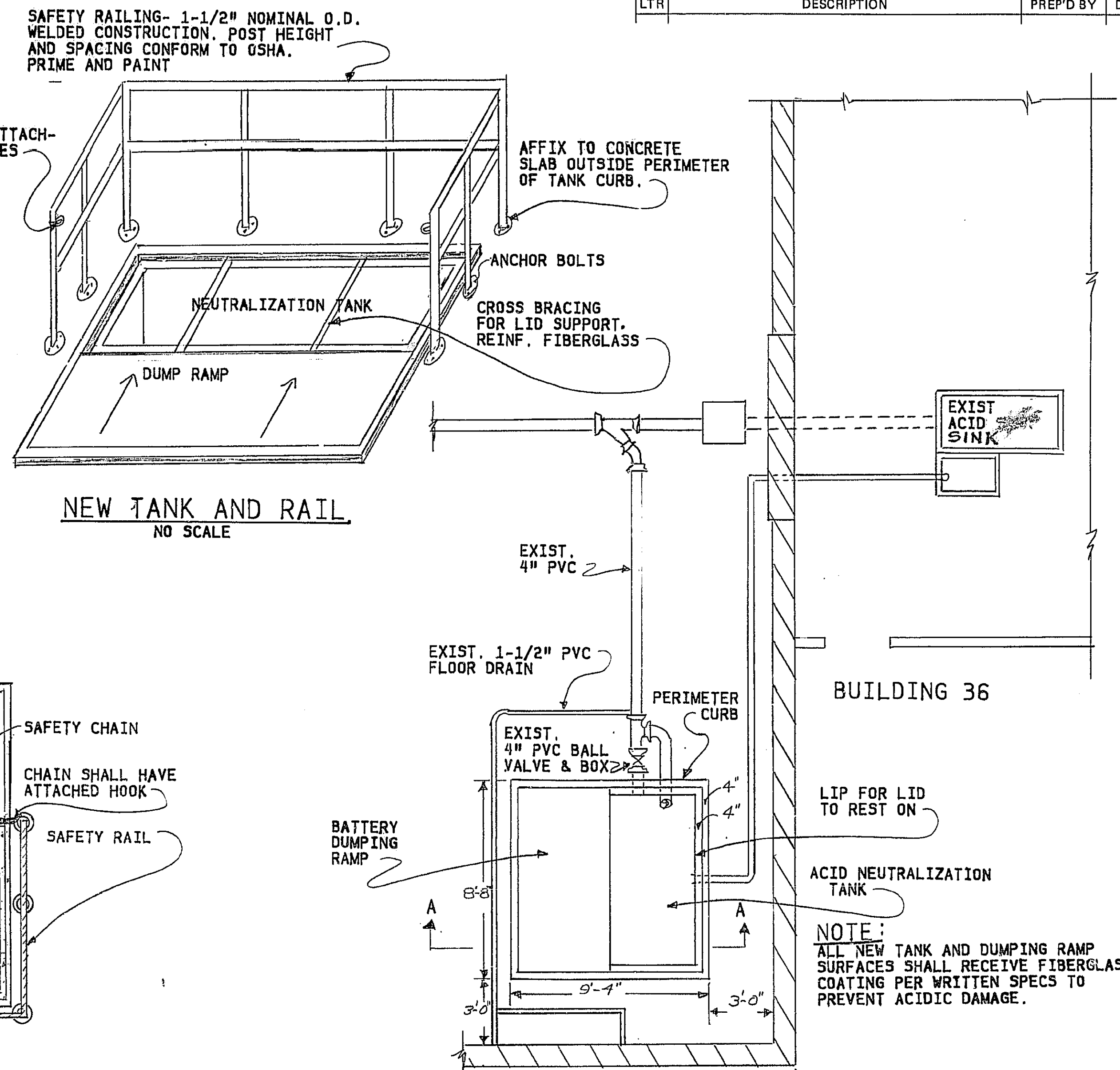
NEW TANK LID  
NO SCALE



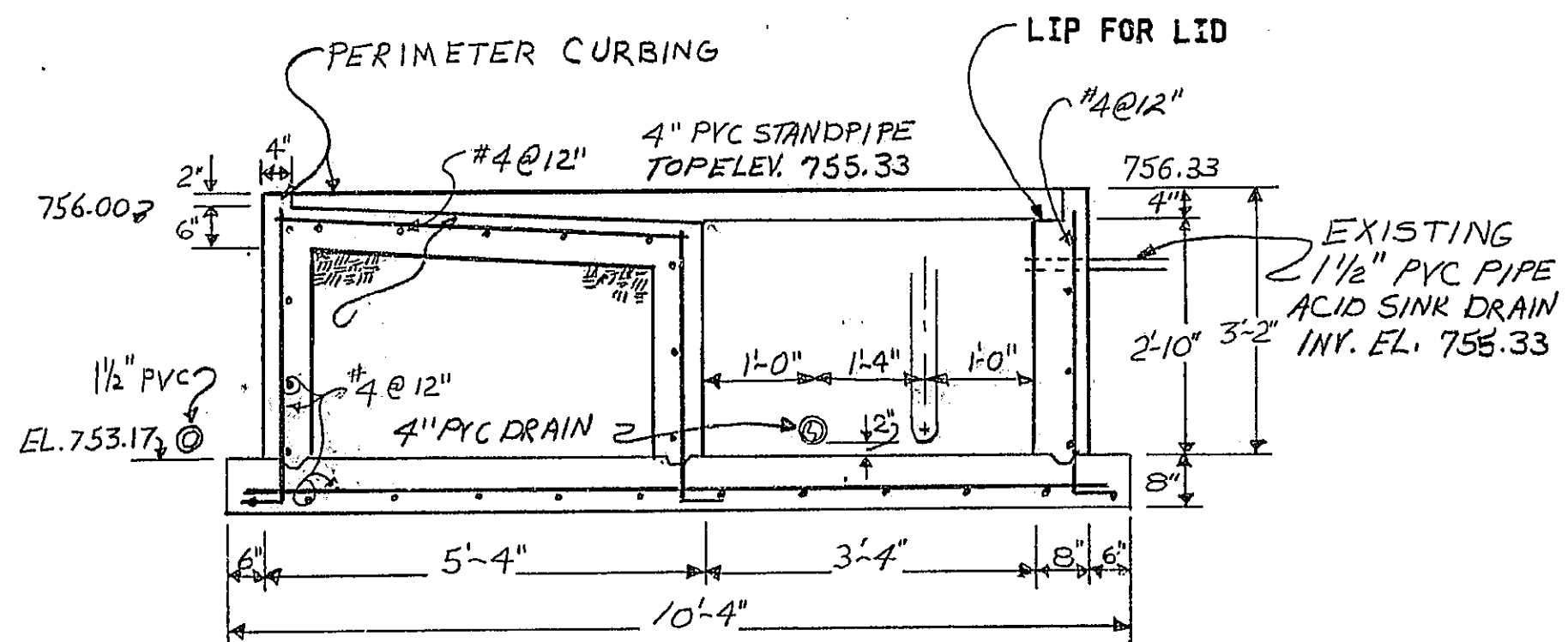
ELECTRIC MIXER - PLAN VIEW  
NO SCALE



ELECTRIC MIXER - SECTION TYPICAL  
NO SCALE

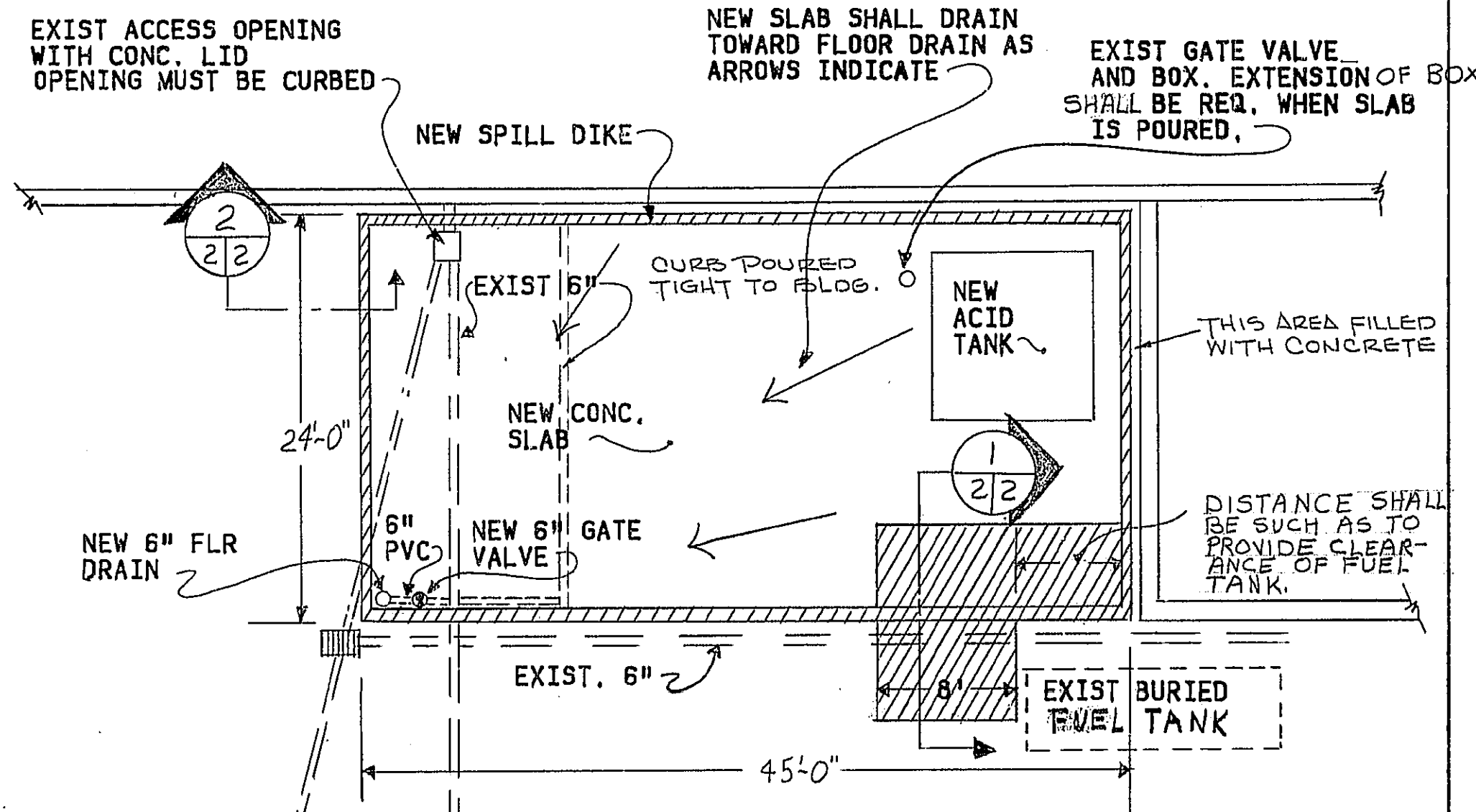


NEW ACID NEUTRALIZATION TANK  
BUILDING 36  
SCALE: 1/4\"/>

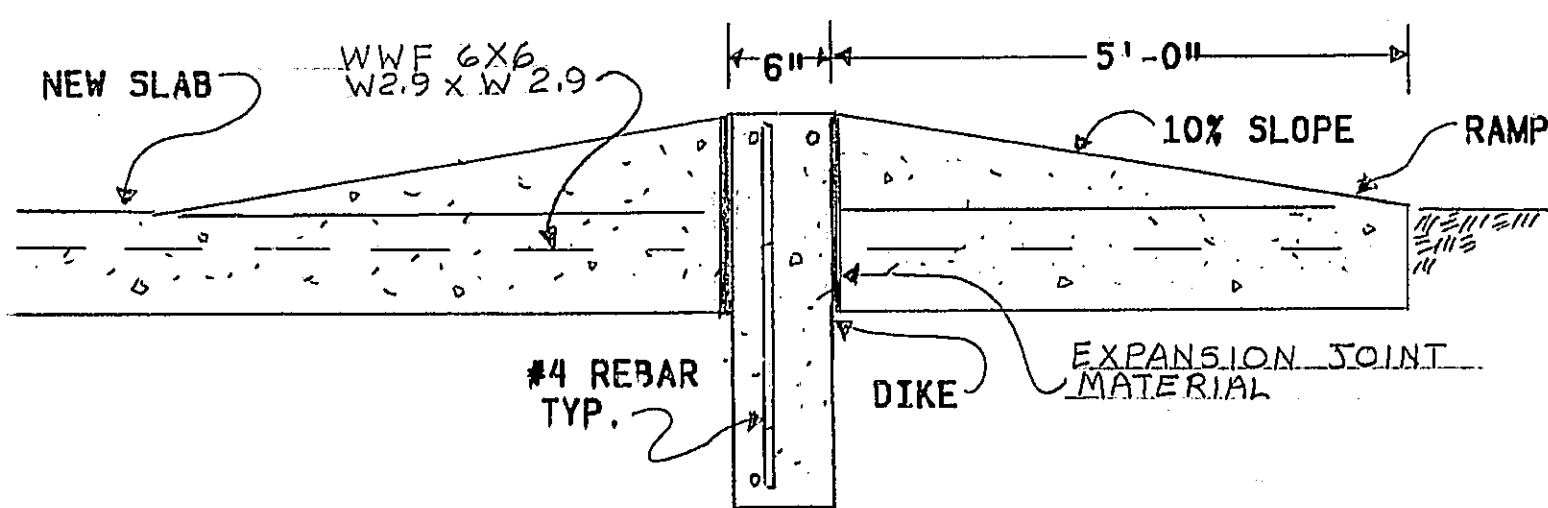


SECTION A-A  
SCALE: 1/2\"/>

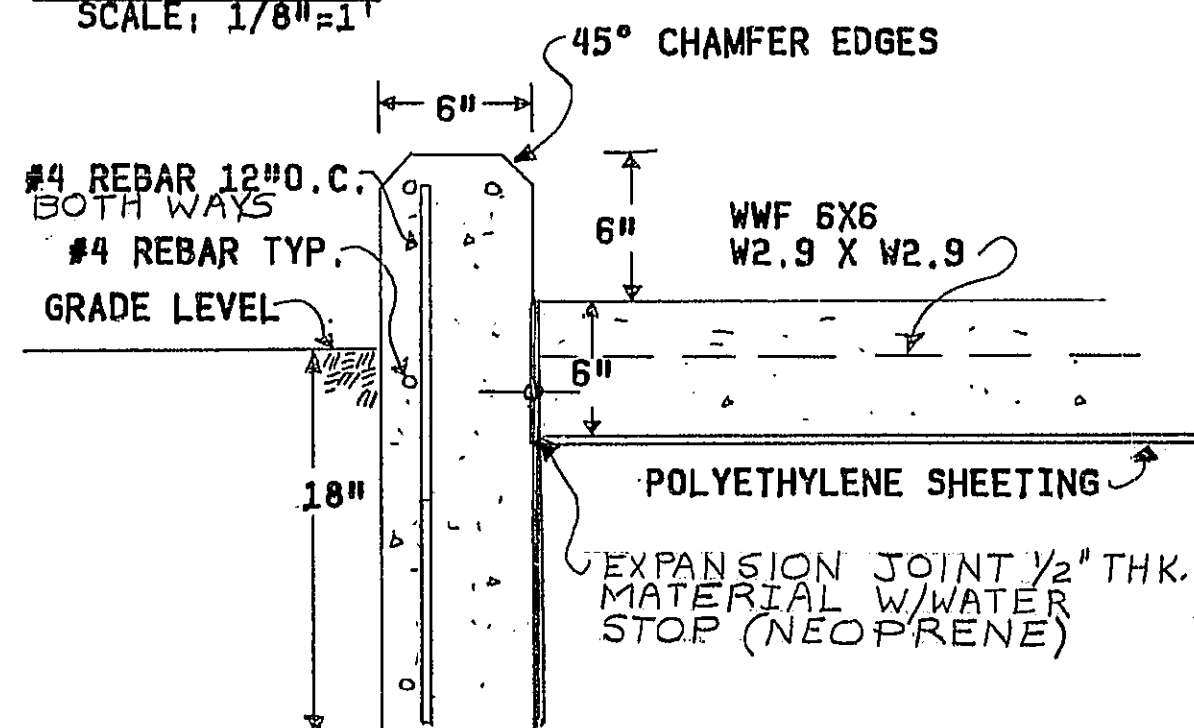
EXISTING PIPING DRAINS SHALL BE CUT AND PLUGGED AS NECESSARY DURING EXCAVATION AND DEMOLITION AND RECONNECTED IN NEW CONSTRUCTION.



SITE PLAN  
SCALE: 1/8\"/>

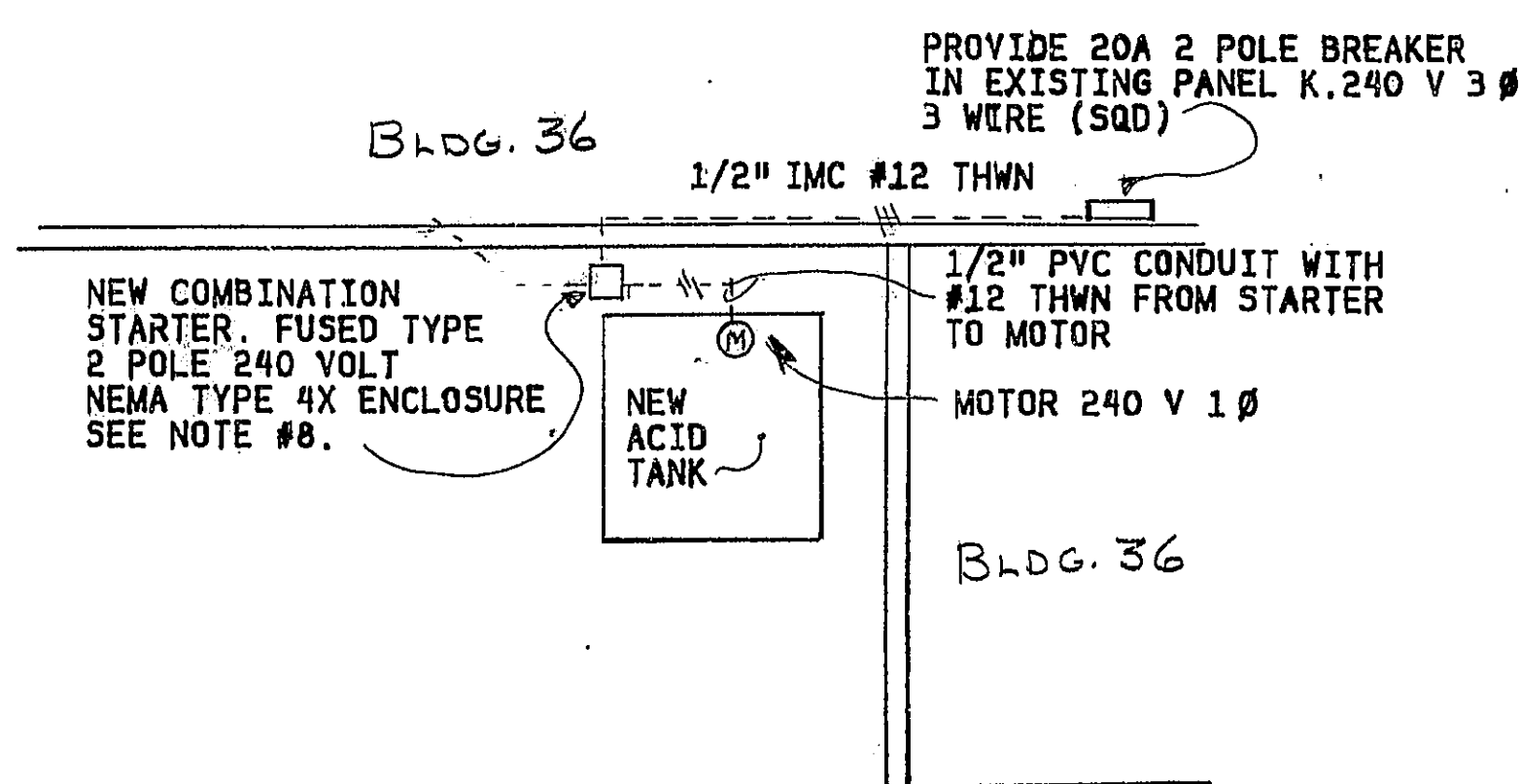


SECTION 1  
SCALE: 1\"/>



SECTION 2  
SCALE: 1-1/2\"/>

## NEW SPILL CURB, RAMP, AND SLAB B-36



ELECTRICAL PLAN  
NO SCALE

SATISFACTORY TO 096 James J. O'Leary DATE 11 July 1984 SATISFACTORY TO 0924 Cathy Andrews DATE 11 July 1984 SATISFACTORY TO 04 R. L. Pugh DATE 18 July 1984	PWO DWG REF PWO DRAWING NO. 4612 DESIGN DRAWN CHECKED SUPV. APPROVED DATE PUBLIC WORKS OFFICER	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL WEAPONS SUPPORT CENTER CRANE, INDIANA NEW ACID NEUTRALIZATION TANK BLDG. 36 NAVFAC DRAWING NO. 2075973 CONSTR. CONTR. NO. N62472-84-C-7077 SCALE NOTED SPEC. NO. 04-84-7077 SHEET 2 OF 2
---	---	---

AS-BUILT 12-9-85 LG 09236

## **APPENDIX B**

### **ANALYTICAL DATA**

#### **B.1 VALIDATED ANALYTICAL DATA SAMPLES COLLECTED THROUGH APRIL 2014**

#### **B.2 HUMAN HEALTH AND ECOLOGICAL RISK SUMMARIES**

**B.1    VALIDATED ANALYTICAL DATA SAMPLES  
COLLECTD THROUGH APRIL 2014**

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23/00-001 23/00-001 19950718 NORMAL SO NORMAL SS -9999 -9999	23/00-002 23/00-002 19950718 NORMAL SO NORMAL SS -9999 -9999	23/00-003 23/00-003 19951116 NORMAL SO NORMAL SS -9999 -9999	23/00-004 23/00-004 19951116 NORMAL SO NORMAL SS -9999 -9999	23/00-005 23/00-005 19960222 NORMAL SO NORMAL SS -9999 -9999	23/00-006 23/00-006 19960222 NORMAL SO NORMAL SS -9999 -9999	23/00-007 23/00-007 19960222 NORMAL SO NORMAL SS -9999 -9999	23/00-008 23/00-008 19960222 NORMAL SO NORMAL SS -9999 -9999	23/00-009 23/00-009 19960222 NORMAL SO NORMAL SS -9999 -9999	23/00-010 23/00-010 19960222 NORMAL SO NORMAL SS -9999 -9999	23/00-011 23/00-011 19960222 NORMAL SO NORMAL SS -9999 -9999	23/00-013 23/00-013 19960222 NORMAL SO NORMAL SS -9999 -9999
DIOXINS/FURANS (UG/KG)												
1,2,3,4,6,7,8,9-OCDD	5.6	0.93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8,9-OCDF	0.338 U	0.358 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDD	0.714 U	0.755 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDF	0.081 U	0.0856 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HPCDF	0.175 U	0.185 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDD	0.476 U	0.503 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDF	0.614 U	0.649 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDD	0.288 U	0.305 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDF	0.363 U	0.384 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	0.276 U	0.291 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDF	0.426 U	0.45 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PCDD	0.526 U	0.556 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PCDF	0.489 U	0.517 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HXCDF	0.501 U	0.53 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PCDF	0.614 U	0.649 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD	0.0501 U	0.053 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	0.0627 U	0.0662 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007	0.00168	0.000279	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007 - HALFND	0.5444007	0.5739757	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDD	0.714 U	0.755 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDF	0.175 U	0.185 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDD	0.276 U	0.291 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDF	0.426 U	0.45 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PCDD	0.526 U	0.556 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PCDF	0.614 U	0.649 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDD	0.0501 U	0.74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDF	0.0627 U	0.0662 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HERBICIDES (UG/KG)												
2,4,5-T	39 U	44 U	NA	NA	1.8 JBP	32 U	28 U	6.3 JBP	29 U	31 U	31 U	1.8 JBP
2,4,5-TP (SILVEX)	39 U	44 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	39 U	44 U	NA	NA	120 U	130 U	11 JP	22 JBP	120 U	120 U	130 U	100 U
METALS (MG/KG)												
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/KG)												
ANTIMONY	2600 U	3000 U	NA	NA	1500 BN	4200 BN	990 BN	1.4 BN	1800 BN	440 BN	540 BN	440 BN
ARSENIC	10700	6800	NA	NA	5400	4500	6000	5900	6300	6900	5900	5100
BARIUM	74700	120000	NA	NA	30800	66200	40600	48900	43600	70700	25600	25400
BERYLLIUM	670	1900	NA	NA	170 B	220 B	280 B	290 B	320 B	370 B	590	2200
CADMIUM	520 U	3000	NA	NA	30 B	250 U	190 B	23 U	23 U	25 U	38 U	21 U
CHROMIUM	22800	23000	NA	NA	30500	11300	11900	11900	14400	12500	11200	10400
COBALT	5200	39100	NA	NA	2800	2700	2600	3500	4500	6300	7700	9300
COPPER	14700	139000	NA	NA	11200	16900	16700	11600	17700	12100	8200	8700
LEAD	30800	40100	NA	NA	227000 N	776000 N	109000 N	119000 N	161000	16800 N	10500 N	15300 N
LITHIUM	NA	NA	NA	NA	1700 B	3900 B	3500 B	4600 B	5900 B	6900 B	2300 B	4100 B
MERCURY	100 U	120 U	NA	NA	140 U	120 U	120 U	140 U	140 U	150 U	140 U	100 U
NICKEL	13500	80200	NA	NA	6400	10100	5500	6900	13300	9600	86600	81100
SELENIUM	650 U	740 U	NA	NA	370 U	400 U	350 BN	350 U	350 U	900	810	320 B
SILVER	1000 U	4900	NA	NA	94 U	110 U	160 B	93 U	94 U	110 U	110 U	73 U
THALLIUM	1300 U	1500 U	NA	NA	480 U	530 U	450 U	480 U	480 U	530 U	550 U	370 U
TIN	32700 U	36000 U	NA	NA	1200 BN	1800 B	1600 BN	1800 BN	3500 B	1200 BN	1400 BN	950 B
VANADIUM	25500	20600	NA	NA	7300	10500	12400	14500	15100	21100	10100	11900
ZINC	45900	152000	NA	NA	41900	45100	42200	45400	92400	28600	91600	80700
MISCELLANEOUS PARAMETERS (%)												
ACTINOLITE	NA	NA	0 U	0 U	NA	NA	NA	NA	NA	NA	NA	NA
AMOSITE	NA	NA	0 U	0 U	NA	NA	NA	NA	NA	NA	NA	NA
ANTHOPHYLLITE	NA	NA	0 U	0 U	NA	NA	NA	NA	NA	NA	NA	NA
ASBESTOS	NA	NA	0 U	0 U	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSOTILE	NA	NA	0 U	0 U	NA	NA	NA	NA	NA	NA	NA	NA
CROCIDOLITE	NA	NA	0 U	0 U	NA	NA	NA	NA	NA	NA	NA	NA
TREMOLITE	NA	NA	0 U	0 U	NA	NA	NA	NA	NA	NA	NA	NA



**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION	23/00-001	23/00-002	23/00-003	23/00-004	23/00-005	23/00-006	23/00-007	23/00-008	23/00-009	23/00-010	23/00-011	23/00-013
SAMPLE ID	23/00-001	23/00-002	23/00-003	23/00-004	23/00-005	23/00-006	23/00-007	23/00-008	23/00-009	23/00-010	23/00-011	23/00-013
SAMPLE DATE	19950718	19950718	19951116	19951116	19960222	19960222	19960222	19960222	19960222	19960222	19960222	19960222
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
MISCELLANEOUS PARAMETERS (F)												
FLASHPOINT	NA	NA	203 U	203	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/												
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)												
PH	NA	NA	8.9	8.9	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (UG/												
CYANIDE	1300 U	1500 U	NA	NA	59 UN	630 UN	570 UN	580 UN	590 UN	620 UN	630 U	520 U
SULFIDE	52000 U	59000 U	NA	NA	56000	37000	33000 U	33000 U	36000	36000	47000	70000
ORGANOPHOSPHOROUS PESTICIDES												
DIMETHOATE	42 U	48 U	NA	NA	28 P	14	8.4 JP	7.2 JP	12 U	18 P	16	10 U
DISULFOTON	21 U	24 U	NA	NA	12 U	13 U	11 U	12 U	17	12 U	13 U	10 U
ETHYL PARATHION	21 U	24 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	21 U	24 U	NA	NA	2.7 JP	13 P	11 U	12 U	12 U	30 P	9 JP	10 U
METHYL PARATHION	21 U	24 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	21 U	24 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	21 U	24 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEPP	2100 U	2400 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
PCBS (MG/KG)												
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)												
1,1-DICHLOROETHENE	NA	NA	NA	NA	0.91 JP	0.14 JP	0.18 JP	3.4 JP	0.18 JP	0.09 JP	1.2 JP	0.25 J
4,4'-DDD	4.2 U	4.9 U	NA	NA	0.5 J	0.17 JP	0.25 JP	0.24 JP	1.5 JP	0.16 JP	4.4 U	3.6 U
4,4'-DDE	8	4.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	6.2	4.9 U	NA	NA	0.61 JB	0.41 JB	0.75 JBP	0.37 JBP	7.9 BP	0.12 JBP	0.11 JBP	0.098 JBP
ALDRIN	2.1 U	2.4 U	NA	NA	1.2 U	1.3 U	0.12 J	0.2 JP	0.1 JP	0.053 JP	0.093 JBP	0.034 JP
ALPHA-BHC	2.1 U	2.4 U	NA	NA	0.067 JP	1.3 U	1.1 U	1.2 U	0.048 JP	1.2 U	1.3 U	1 U
ALPHA-CHLORDANE	2.1 U	2.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	42 U	49 U	NA	NA	23 U	25 U	23 U	23 U	23 U	24 U	25 U	20 U
AROCLOR-1221	84 U	97 U	NA	NA	23 U	25 U	23 U	23 U	23 U	24 U	25 U	20 U
AROCLOR-1232	42 U	49 U	NA	NA	23 U	25 U	23 U	23 U	23 U	24 U	25 U	20 U
AROCLOR-1242	42 U	49 U	NA	NA	23 U	25 U	23 U	23 U	23 U	24 U	25 U	20 U
AROCLOR-1248	42 U	49 U	NA	NA	23 U	25 U	23 U	23 U	23 U	24 U	25 U	20 U
AROCLOR-1254	42 U	49 U	NA	NA	23 U	25 U	23 U	23 U	23 U	24 U	25 U	20 U
AROCLOR-1260	42 U	49 U	NA	NA	23 U	25 U	23 U	23 U	23 U	24 U	25 U	20 U
BETA-BHC	2.1 U	2.4 U	NA	NA	0.49 JP	1 JBP	0.19 J	0.2 JP	1.5	0.27 JP	1.3 U	1 U
CHLORDANE	NA	NA	NA	NA	4.7 U	5 U	4.5 U	4.6 U	4.6 U	4.8 U	5 U	4.1 U
DELTA-BHC	2.1 U	2.4 U	NA	NA	0.11 JP	1.3 U	1.1 U	1.2 U	0.053 J	0.059 JP	0.12 JP	1 U
DIELDRIN	4.2 U	4.9 U	NA	NA	0.51 JP	0.37 JP	0.18 JP	0.48 JP	3.2 P	1.8 U	1.9 U	1.5 U
ENDOSULFAN I	2.1 U	2.4 U	NA	NA	0.4 JP	0.13 JBP	1.7 U	0.5 JP	0.89 JP	0.21 J	1.9 U	1.5 U
ENDOSULFAN II	4.2 U	4.9 U	NA	NA	0.48 JBP	0.1 JBP	0.49 JBP	0.25 JBP	0.84 JBP	4.2 U	0.123 JP	3.6 U
ENDOSULFAN SULFATE	4.2 U	4.9 U	NA	NA	0.12 JP	0.14 JP	0.16 JP	0.075 JP	1.4 JP	0.1 JP	0.17 JP	0.19 JP
ENDRIN	4.2 U	4.9 U	NA	NA	0.47 JP	0.6 J	0.23 JP	0.61 JP	1.3 JP	0.55 JP	3.1 U	2.6 U
ENDRIN ALDEHYDE	4.2 U	4.9 U	NA	NA	1.7 P	4.1 P	0.6 JP	0.19 JP	2.5 P	0.35 JP	0.17 JP	1 U
ENDRIN KETONE	4.2 U	4.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	4.2 U	4.9 U	NA	NA	0.047 J	1.3 U	1.1 U	0.098 JP	0.37 J	0.015 JP	1.3 U	1 U
GAMMA-CHLORDANE	2.1 U	2.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	2.1 U	2.4 U	NA	NA	0.043 JBP	1.3 U	1.1 U	0.059 JBP	0.16 JBP	0.048 JBP	0.063 JBP	0.038 JBP
HEPTACHLOR EPOXIDE	2.1 U	2.4 U	NA	NA	0.083 JP	1.3 U	0.16 JP	1 JP	2.3	0.057 J	1.3 U	1 U
KEPONE	42 U	49 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	21 U	24 U	NA	NA	5.8 BP	1 JBP	1.1 JBP	0.46 JBP	3.8 JBP	0.49 JBP	0.52 JBP	0.2 JBP
PHORATE	NA	NA	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
TOXAPHENE	210 U	240 U	NA	NA	23 U	25 U	23 U	23 U	23 U	24 U	25 U	20 U
PETROLEUM HYDROCARBONS (MG/K												
DRO (C08-C28)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DRO (C08-C34)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARB												
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23/00-001	23/00-002	23/00-003	23/00-004	23/00-005	23/00-006	23/00-007	23/00-008	23/00-009	23/00-010	23/00-011	23/00-013
SAMPLE ID	23/00-001	23/00-002	23/00-003	23/00-004	23/00-005	23/00-006	23/00-007	23/00-008	23/00-009	23/00-010	23/00-011	23/00-013
SAMPLE DATE	19950718	19950718	19951116	19951116	19960222	19960222	19960222	19960222	19960222	19960222	19960222	19960222
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)												
1,2,4,5-TETRACHLOROBENZENE	330 U	340 U	NA	NA	1500 U	1600 U	1500 U	1500 U	1500 U	1600 U	1600 U	1400 U
1,2,4-TRICHLOROBENZENE	330 U	340 U	NA	NA	680 U	700 U	630 U	640 U	640 U	680 U	700 U	570 U
1,2-DICHLOROBENZENE	330 U	340 U	NA	NA	690 U	750 U	680 U	690 U	690 U	730 U	750 U	610 U
1,3,5-TRINITROBENZENE	330 U	340 U	NA	NA	1100 U	1200 U	1000 U	1100 U	1100 U	1100 U	1200 U	950 U
1,3-DICHLOROBENZENE	330 U	340 U	NA	NA	650 U	650 U	590 U	590 U	600 U	630 U	650 U	530 U
1,3-DINITROBENZENE	330 U	340 U	NA	NA	660 U	710 U	840 U	650 U	650 U	690 U	710 U	580 U
1,4-DICHLOROBENZENE	330 U	340 U	NA	NA	610 U	660 U	600 U	600 U	810 U	640 U	660 U	540 U
1,4-NAPHTHOQUINONE	330 U	340 U	NA	NA	1900 U	2000 U	1800 U	1900 U	1900 U	2000 U	2000 U	1700 U
1,4-PHENYLENEDIAMINE	330 U	340 U	NA	NA	780 U	840 U	760 U	770 U	770 U	810 U	840 U	690 U
1-NAPHTHYLAMINE	330 U	340 U	NA	NA	1600 U	1800 U	1600 U	1600 U	1600 U	1700 U	1800 U	1500 U
2,3,4,6-TETRACHLOROPHENOL	330 U	340 U	NA	NA	1600 U	1800 U	1600 U	1600 U	1600 U	1700 U	1800 U	1500 U
2,4,5-TRICHLOROPHENOL	330 U	340 U	NA	NA	1500 U	1600 U	1500 U	1500 U	1500 U	1600 U	1600 U	1400 U
2,4,6-TRICHLOROPHENOL	330 U	340 U	NA	NA	1500 U	1600 U	1500 U	1500 U	1500 U	1600 U	1600 U	1400 U
2,4-DICHLOROPHENOL	330 U	340 U	NA	NA	650 U	700 U	630 U	640 U	640 U	680 U	700 U	570 U
2,4-DIMETHYLPHENOL	330 U	340 U	NA	NA	720 U	770 U	700 U	710 U	710 U	750 U	770 U	640 U
2,4-DINITROPHENOL	1600 U	1700 U	NA	NA	2000 U	2200 U	2000 U	2000 U	2000 U	2100 U	2200 U	1800 U
2,4-DINITROTOLUENE	330 U	340 U	NA	NA	780 U	840 U	760 U	770 U	770 U	810 U	840 U	690 U
2,6-DICHLOROPHENOL	330 U	340 U	NA	NA	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U	1500 U	1200 U
2,6-DINITROTOLUENE	330 U	340 U	NA	NA	880 U	950 U	860 U	870 U	880 U	930 U	950 U	780 U
2-ACETYLAMINOFLUORENE	330 U	340 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	330 U	340 U	NA	NA	1100 U	1200 U	1100 U	1100 U	1100 U	1200 U	1200 U	1000 U
2-CHLOROPHENOL	330 U	340 U	NA	NA	740 U	800 U	720 U	730 U	740 U	780 U	800 U	660 U
2-METHYLNAPHTHALENE	330 U	340 U	NA	NA	990 U	1100 U	970 U	980 U	980 U	1000 U	1100 U	880 U
2-METHYLPHENOL	330 U	340 U	NA	NA	760 U	820 U	750 U	760 U	760 U	800 U	820 U	680 U
2-NAPHTHYLAMINE	330 U	340 U	NA	NA	1000 U	1100 U	990 U	1000 U	1000 U	1100 U	1100 U	900 U
2-NITROANILINE	1600 U	1700 U	NA	NA	1300 U	1400 U	1300 U	1300 U	1300 U	1400 U	1400 U	1100 U
2-NITROPHENOL	330 U	340 U	NA	NA	730 U	780 U	710 U	720 U	720 U	770 U	780 U	650 U
2-PICOLINE	330 U	340 U	NA	NA	1400 U	1500 U	1400 U	1400 U	1400 U	1500 U	1500 U	1200 U
3,3'-DICHLOROBENZIDINE	660 U	680 U	NA	NA	590 U	830 U	570 U	580 U	580 U	620 U	630 U	520 U
3,3'-DIMETHYLBENZIDINE	330 U	340 U	NA	NA	530 U	570 U	520 U	520 U	530 U	560 U	570 U	470 U
3-CHLOROPROPENE	130 U	150 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLCHOLANTHRENE	330 U	340 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	330 U	340 U	NA	NA	1500 U	1600 U	1500 U	1500 U	1500 U	1600 U	1600 U	1400 U
3-NITROANILINE	1600 U	1700 U	NA	NA	810 U	870 U	790 U	800 U	810 U	850 U	870 U	720 U
4,6-DINITRO-2-METHYLPHENOL	1600 U	1700 U	NA	NA	2100 U	2300 U	2100 U	2100 U	2100 U	2200 U	2300 U	1900 U
4-AMINOBIIPHENYL	330 U	340 U	NA	NA	480 U	520 U	470 U	480 U	480 U	510 U	520 U	430 U
4-BROMOPHENYL PHENYL ETHER	330 U	340 U	NA	NA	880 U	950 U	860 U	870 U	880 U	930 U	950 U	780 U
4-CHLORO-3-METHYLPHENOL	330 U	340 U	NA	NA	220 U	240 U	220 U	220 U	220 U	230 U	240 U	200 U
4-CHLOROANILINE	660 U	680 U	NA	NA	810 U	870 U	790 U	800 U	810 U	850 U	870 U	720 U
4-CHLOROPHENYL PHENYL ETHER	330 U	340 U	NA	NA	710 U	760 U	690 U	700 U	700 U	740 U	760 U	620 U
4-METHYLPHENOL	330 U	340 U	NA	NA	1500 U	1600 U	1500 U	1500 U	1500 U	1600 U	1600 U	1400 U
4-NITROANILINE	1600 U	1700 U	NA	NA	1300 U	1400 U	1300 U	1300 U	1300 U	1400 U	1400 U	1100 U
4-NITROPHENOL	330 U	340 U	NA	NA	810 U	870 U	790 U	800 U	810 U	850 U	870 U	720 U
4-NITROQUINOLINE-1-OXIDE	330 U	340 U	NA	NA	5600 U	6100 U	5500 U	5600 U	5600 U	5900 U	6100 U	5000 U
5-NITRO-O-TOLUIDINE	330 U	340 U	NA	NA	1200 U	1300 U	1100 U	1200 U	1200 U	1200 U	1300 U	1000 U
7,12-DIMETHYLBENZ(A)ANTHRACENE	330 U	340 U	NA	NA	480 U	520 U	470 U	480 U	480 U	510 U	520 U	430 U
A,A-DIMETHYLPHENETHYLAMINE	330 U	340 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	330 U	340 U	NA	NA	780 U	64 J	770 U	770 U	770 U	810 U	840 U	690 U
ACENAPHTHYLENE	330 U	340 U	NA	NA	790 U	850 U	770 U	780 U	780 U	830 U	850 U	700 U
ACETOPHENONE	330 U	340 U	NA	NA	780 U	840 U	760 U	770 U	770 U	810 U	840 U	690 U
ACROLEIN	1300 U	1500 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACRYLONITRILE	1300 U	1500 U	NA	NA	250 U	270 U	240 U	240 U	250 U	260 U	270 U	220 U
ANILINE	330 U	340 U	NA	NA	660 U	710 U	840 U	650 U	650 U	690 U	710 U	580 U
ANTHRACENE	330 U	340 U	NA	NA	870 U	77 J	850 U	860 U	860 U	910 U	940 U	770 U
ARAMITE	330 U	340 U	NA	NA	780 U	840 U	760 U	770 U	770 U	810 U	840 U	690 U
BENZO(A)ANTHRACENE	330 U	340 U	NA	NA	40 J	240 J	760 U	770 U	34 J	810 U	840 U	690 U
BENZO(A)PYRENE	330 U	340 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	330 U	340 U	NA	NA	110 XJ	420 XJ	880 U	900 U	87 XJ	950 U	970 U	800 U
BENZO(G,H,I)PERYLENE	330 U	340 U	NA	NA	43 J	110 J	710 U	720 U	720 U	770 U	780 U	650 U
BENZO(K)FLUORANTHENE	330 U	340 U	NA	NA	110 XJ	440 XJ	710 U	720 U	92 XJ	770 U	780 U	650 U
BENZYL ALCOHOL	660 U	680 U	NA	NA	650 U	700 U	630 U	640 U	640 U	680 U	700 U	570 U
BIS(2-CHLOROETHOXY)METHANE	330 U	340 U	NA	NA	790 U	850 U	770 U	780 U	780 U	830 U	850 U	700 U
BIS(2-CHLOROETHYL)ETHER	330 U	340 U	NA	NA	330 U	350 U	320 U	330 U	330 U	350 U	350 U	290 U
BIS(2-CHLOROISOPROPYL)ETHER	330 U	340 U	NA	NA	760 U	820 U	750 U	760 U	760 U	800 U	820 U	680 U
BIS(2-ETHYLHEXYL)PHTHALATE	330 U	340 U	NA	NA	70 J	66 J	67 J	200 J	96 J	46 J	69 J	44 J
BUTYL BENZYL PHTHALATE	330 U	340 U	NA	NA	800 U	860 U	780 U	790 U	790 U	840 U	860 U	710 U
CHLOROBENZILATE	84 U	97 U	NA	NA	840 U	900 U	820 U	830 U	830 U	880 U	900 U	740 U
CHRYSENE	330 U	340 U	NA	NA	54 J	280 J	620 U	630 U	46 J	670 U	680 U	560 U
DIALATE	422 U	487 U	NA	NA	780 U	840 U	760 U	770 U	770 U	810 U	840 U	690 U

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23/00-001	23/00-002	23/00-003	23/00-004	23/00-005	23/00-006	23/00-007	23/00-008	23/00-009	23/00-010	23/00-011	23/00-013
SAMPLE ID	23/00-001	23/00-002	23/00-003	23/00-004	23/00-005	23/00-006	23/00-007	23/00-008	23/00-009	23/00-010	23/00-011	23/00-013
SAMPLE DATE	19950718	19950718	19951116	19951116	19960222	19960222	19960222	19960222	19960222	19960222	19960222	19960222
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
DIBENZO(A,H)ANTHRACENE	330 U	340 U	NA	NA	210 U	230 U	210 U	210 U	210 U	220 U	230 U	190 U
DIBENZOFURAN	330 U	340 U	NA	NA	810 U	870 U	790 U	800 U	810 U	850 U	870 U	720 U
DIETHYL PHTHALATE	330 U	340 U	NA	NA	850 U	910 U	830 U	840 U	840 U	890 U	910 U	750 U
DIMETHYL PHTHALATE	330 U	340 U	NA	NA	1100 U	1200 U	1100 U	1100 U	1100 U	1200 U	1200 U	1000 U
DI-N-BUTYL PHTHALATE	330 U	340 U	NA	NA	910 U	970 U	880 U	900 U	900 U	950 U	970 U	800 U
DI-N-OCTYL PHTHALATE	330 U	340 U	NA	NA	560 U	610 U	550 U	560 U	560 U	590 U	610 U	500 U
DIPHENYLAMINE	330 U	340 U	NA	NA	1600 U	1800 U	1800 U	1600 U	1600 U	1700 U	1800 U	1500 U
ETHYL METHANE SULFONATE	330 U	340 U	NA	NA	710 U	760 U	690 U	700 U	700 U	740 U	760 U	620 U
FLUORANTHENE	330 U	340 U	NA	NA	83 J	520 J	1100 U	1100 U	45 J	1100 U	1200 U	960 U
FLUORENE	330 U	340 U	NA	NA	810 U	58 J	790 U	800 U	810 U	850 U	870 U	720 U
HEXACHLOROBENZENE	330 U	340 U	NA	NA	910 U	970 U	880 U	900 U	900 U	950 U	970 U	800 U
HEXACHLOROBUTADIENE	330 U	340 U	NA	NA	660 U	710 U	640 U	650 U	650 U	690 U	710 U	580 U
HEXACHLOROCYCLOPENTADIENE	330 U	340 U	NA	NA	780 U	840 U	760 U	770 U	770 U	810 U	840 U	690 U
HEXACHLOROETHANE	330 U	340 U	NA	NA	710 U	760 U	690 U	700 U	700 U	740 U	760 U	620 U
HEXACHLOROPROPENE	330 U	340 U	NA	NA	670 U	720 U	660 U	660 U	670 U	700 U	720 U	590 U
INDENO(1,2,3-CD)PYRENE	330 U	340 U	NA	NA	540 U	110 J	530 U	530 U	540 U	570 U	580 U	480 U
ISOBUTANOL	1000 U	1000 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISODRIN	NA	NA	NA	NA	1100 U	1200 U	1100 U	1100 U	1100 U	1100 U	1200 U	960 U
ISOPHORONE	330 U	340 U	NA	NA	800 U	860 U	780 U	790 U	790 U	840 U	860 U	710 U
ISOSAFROLE	330 U	340 U	NA	NA	1500 U	1600 U	1500 U	1500 U	1500 U	1600 U	1600 U	1400 U
METHAPYRILENE	330 U	340 U	NA	NA	1500 U	1600 U	1500 U	1500 U	1500 U	1600 U	1600 U	1400 U
METHYL METHANE SULFONATE	330 U	340 U	NA	NA	820 U	890 U	800 U	810 U	820 U	860 U	890 U	730 U
NAPHTHALENE	330 U	340 U	NA	NA	780 U	840 U	760 U	770 U	770 U	810 U	840 U	690 U
NITROBENZENE	330 U	340 U	NA	NA	800 U	860 U	780 U	790 U	790 U	840 U	860 U	710 U
N-NITROSODIETHYLAMINE	330 U	340 U	NA	NA	260 U	280 U	260 U	260 U	260 U	280 U	280 U	230 U
N-NITROSODIMETHYLAMINE	NA	NA	NA	NA	310 U	330 U	300 U	300 U	300 U	320 U	330 U	270 U
N-NITROSO-DI-N-BUTYLAMINE	330 U	340 U	NA	NA	180 U	190 U	170 U	170 U	180 U	190 U	190 U	160 U
N-NITROSO-DI-N-PROPYLAMINE	330 U	340 U	NA	NA	280 U	300 U	280 U	280 U	280 U	300 U	300 U	250 U
N-NITROSODIPHENYLAMINE	330 U	340 U	NA	NA	1600 U	1800 U	1600 U	1600 U	1600 U	1700 U	1800 U	1500 U
N-NITROSOMETHYLETHYLAMINE	330 U	340 U	NA	NA	280 U	300 U	280 U	280 U	280 U	300 U	300 U	250 U
N-NITROSOMORPHOLINE	330 U	340 U	NA	NA	880 U	950 U	860 U	870 U	880 U	930 U	950 U	780 U
N-NITROSOPIPERIDINE	330 U	340 U	NA	NA	870 U	940 U	850 U	860 U	860 U	910 U	940 U	770 U
N-NITROSOPYRROLIDINE	330 U	340 U	NA	NA	620 U	670 U	610 U	620 U	620 U	650 U	670 U	55 U
O,O,O-TRIETHYL PHOSPHOROTHIOATE	330 U	340 U	NA	NA	6200 U	6700 U	6100 U	6200 U	6200 U	6500 U	6700 U	5500 U
O-TOLUIDINE	330 U	340 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-DIMETHYLAMINOAZOBENZENE	330 U	340 U	NA	NA	790 U	850 U	770 U	780 U	780 U	830 U	850 U	700 U
PENTACHLOROBENZENE	330 U	340 U	NA	NA	780 U	840 U	760 U	770 U	770 U	810 U	840 U	690 U
PENTACHLOROPHENOL	1600 U	1700 U	NA	NA	1600 U	1800 U	1600 U	1600 U	1600 U	1700 U	1800 U	1500 U
PHENACETIN	330 U	340 U	NA	NA	720 U	770 U	700 U	710 U	710 U	750 U	770 U	640 U
PHENANTHRENE	330 U	340 U	NA	NA	46 J	470 J	710 U	720 U	720 U	770 U	780 U	650 U
PHENOL	330 U	340 U	NA	NA	670 U	720 U	660 U	660 U	570 U	700 U	720 U	590 U
PRONAMIDE	NA	NA	NA	NA	760 U	820 U	750 U	760 U	760 U	800 U	820 U	680 U
PYRENE	330 U	340 U	NA	NA	100 J	540 J	840 U	850 U	53 J	900 U	920 U	760 U
PYRIDINE	330 U	340 U	NA	NA	650 U	700 U	630 U	640 U	640 U	680 U	700 U	570 U
SAFROLE	330 U	340 U	NA	NA	110	730 U	670 U	870 U	680 U	720 U	730 U	600 U
THIONAZIN	330 U	340 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP HERBICIDES (UG/L)												
2,4,5-TP (SILVEX)	NA	NA	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	NA	NA	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (UG/L)												
ARSENIC	NA	NA	20 U	20 U	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	1270	766	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	40 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	100 U	100 U	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	100 U	100 U	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	20 U	20 U	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	50 U	50 U	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (UG/L)												
PAINT FILTER	NA	NA	0 U	0 U	NA	NA	NA	NA	NA	NA	NA	NA
REACTIVE CYANIDE	NA	NA	2000 U	2000 U	NA	NA	NA	NA	NA	NA	NA	NA
REACTIVE SULFIDE	NA	NA	40000 U	48000	NA	NA	NA	NA	NA	NA	NA	NA
TCLP PESTICIDE/PCBS (UG/L)												
ALPHA-CHLORDANE	NA	NA	0.1 U	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	0.1 U	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	0.1 U	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	0.1 U	0.1 U	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	1 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23/00-001	23/00-002	23/00-003	23/00-004	23/00-005	23/00-006	23/00-007	23/00-008	23/00-009	23/00-010	23/00-011	23/00-013
SAMPLE ID	23/00-001	23/00-002	23/00-003	23/00-004	23/00-005	23/00-006	23/00-007	23/00-008	23/00-009	23/00-010	23/00-011	23/00-013
SAMPLE DATE	19950718	19950718	19951116	19951116	19960222	19960222	19960222	19960222	19960222	19960222	19960222	19960222
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
VOLATILES (UG/KG)												
1,1,1,2-TETRACHLOROETHANE	6.5 U	7.4 U	NA	NA	24 U	25 U	23 U	23 U	24 U	25 U	25 U	21 U
1,1,1-TRICHLOROETHANE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
1,1,2,2-TETRACHLOROETHANE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
1,1,2-TRICHLOROETHANE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
1,1-DICHLOROETHANE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
1,1-DICHLOROETHENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
1,2,3-TRICHLOROPROPANE	6.5 U	7.4 U	NA	NA	24 U	25 U	23 U	23 U	24 U	25 U	25 U	21 U
1,2-DIBROMO-3-CHLOROPROPANE	6.5 U	7.4 U	NA	NA	59 U	63 U	57 U	58 U	59 U	62 U	63 U	52 U
1,2-DIBROMOETHANE	6.5 U	7.4 U	NA	NA	18 U	19 U	17 U	17 U	18 U	19 U	19 U	16 U
1,2-DICHLOROETHANE	3.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
1,2-DICHLOROPROPANE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
1,4-DIOXANE	1000 U	1000 U	NA	NA	60000 U	65000 U	59000 U	59000 U	60000 U	63000 U	65000 U	53000 U
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	5.9 JBP	3.7 JBP	1.4 JBP	1.9 JBP	29 U	2.3 JBP	9.5 JBP	2.5 JBP
2-BUTANONE	130 U	340 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
2-HEXANONE	65 U	74 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
3-CHLOROPROPENE	5 U	5 U	NA	NA	18 U	19 U	17 U	17 U	18 U	19 U	19 U	16 U
4-METHYL-2-PENTANONE	65 U	74 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
ACETONE	130 U	150 U	NA	NA	20 BN	13 U	11 U	12 U	12 U	12 U	13 U	10 U
ACETONITRILE	6.5 U	7.4 U	NA	NA	240 U	250 U	230 U	230 U	240 U	250 U	250 U	210 U
ACROLEIN	NA	NA	NA	NA	270 U	290 U	260 U	270 U	270 U	280 U	290 U	240 U
BENZENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
BROMODICHLOROMETHANE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
BROMOFORM	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
BROMOMETHANE	13 U	15 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
CARBON DISULFIDE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
CARBON TETRACHLORIDE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
CHLOROBENZENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
CHLORODIBROMOMETHANE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
CHLOROETHANE	13 U	15 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
CHLOROFORM	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
CHLOROMETHANE	13 U	15 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
CHLOROPRENE	5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
DIBROMOMETHANE	6.5 U	7.4 U	NA	NA	24 U	25 U	23 U	23 U	24 U	25 U	25 U	21 U
DICHLORODIFLUOROMETHANE	6.5 U	7.4 U	NA	NA	24 U	25 U	23 U	23 U	24 U	25 U	25 U	21 U
ETHYL METHACRYLATE	6.5 U	7.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
ISOBUTANOL	NA	NA	NA	NA	15000 U	16000 U	15000 U	15000 U	15000 U	16000 U	16000 U	14000 U
ISODRIN	11 U	12 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	6.5 U	7.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHACRYLONITRILE	6.5 U	7.4 U	NA	NA	24 U	25 U	23 U	23 U	24 U	25 U	25 U	21 U
METHYL IODIDE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
METHYL METHACRYLATE	6.5 U	7.4 U	NA	NA	59 U	63 U	57 U	57 U	59 U	62 U	63 U	52 U
METHYLENE CHLORIDE	22	41	NA	NA	11 JB	18 B	27 B	13	11 JB	12 B	11 JB	12 B
O-XYLENE	6.5 U	7.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROETHANE	6.5 U	7.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLORONITROBENZENE	8.4 U	9.7 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PROPIONITRILE	6.5 U	7.4 U	NA	NA	690 U	750 U	680 U	890 U	690 U	730 U	750 U	610 U
STYRENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
TETRACHLOROETHANE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
TOLUENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
TOTAL XYLENES	NA	NA	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
TRANS-1,2-DICHLOROETHENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
TRANS-1,3-DICHLOROPROPENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U
TRANS-1,4-DICHLORO-2-BUTENE	6.5 U	7.4 U	NA	NA	18 U	19 U	17 U	17 U	18 U	19 U	19 U	16 U
TRICHLOROETHENE	6.5 U	7.4 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	22
TRICHLOROFLUOROMETHANE	6.5 U	7.4 U	NA	NA	24 U	25 U	23 U	23 U	24 U	25 U	25 U	21 U
VINYL ACETATE	6.5 U	7.4 U	NA	NA	24 U	25 U	23 U	23 U	24 U	25 U	25 U	21 U
VINYL CHLORIDE	13 U	15 U	NA	NA	12 U	13 U	11 U	12 U	12 U	12 U	13 U	10 U



**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION	23SB001				23SB002				23SB003				
SAMPLE ID	23SS001-0002	23SS001-0002-D	23SB001-1012	23SB001-1012-D	23SS002-0002	23SB0020204	23SB0020406	23SB002-1012	23SS003-0002	23SS003-0002-D	23SB0030204	23SB0030406	23SB003-0810
SAMPLE DATE	20121007	20121007	20121007	20121007	20121007	20140326	20140326	20121007	20121007	20121007	20140326	20140326	20121007
SAMPLE CODE	NORMAL	DUP	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SB	SS	SB	SB	SB	SS	SS	SB	SB	SB
TOP DEPTH	0	0	10	10	0	2	4	10	0	0	2	4	8
BOTTOM DEPTH	2	2	12	12	2	4	6	12	2	2	4	6	10
DIOXINS/FURANS (UG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007 - HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HERBICIDES (UG/KG)													
2,4,5-T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)													
ANTIMONY	2.44 U	2.42 U	2.38 U	2.39 U	2.35 U	NA	NA	2.24 UJ	0.875 U	2.11 U	NA	NA	2.47 U
ARSENIC	8.07	7.58	9.5	8.01	7.16	NA	NA	9.4 J	5.64	5.94	NA	NA	12.8
BARIUM	67.4	84.3	88.4	84.5	72	NA	NA	41.9	29.1	41.2	NA	NA	77.5
BERYLLIUM	0.46 J	0.485 J	0.593 J	0.58 J	0.455 J	NA	NA	0.494 J	0.21 J	0.321 J	NA	NA	0.605 J
CADMIUM	0.61 U	1.88	0.595 U	0.597 U	0.757 J	NA	NA	0.559 U	0.219 U	0.528 U	NA	NA	0.619 U
CHROMIUM	29.5 J	116 J	19	17.8	32.5	NA	NA	16.9 J	11.9 J	24 J	NA	NA	29.8
COBALT	7.38	9.03	7.63	9.84	7.49	NA	NA	2.46 J	3.48	4.14	NA	NA	5.69
COPPER	39.8	60.1	14.6	12.6	30.1	NA	NA	10.9	6.41 J	12.6 J	NA	NA	20.7
LEAD	125 J	73.2 J	18.3	13	61 J	NA	NA	11.8	8.54 J	14.4 J	NA	NA	14.7
MERCURY	0.692 J	2.37 J	0.0475	0.0456	1.6 J	NA	NA	0.0642	0.015 J	0.0625	NA	NA	0.0384 J
NICKEL	13.8 J	22.9 J	11.2	12.3	11	NA	NA	5.15	10.7	11.3	NA	NA	16.8
SELENIUM	1.53 U	1.51 U	1.49 U	1.49 U	1.47 U	NA	NA	1.4 U	0.656 U	1.32 U	NA	NA	1.55 U
SILVER	0.61 U	0.606 U	0.595 U	0.597 U	2.21 J	NA	NA	0.559 U	0.219 U	0.528 U	NA	NA	0.619 U
THALLIUM	1.22 U	1.21 U	1.19 U	1.19 U	1.18 U	NA	NA	1.12 U	0.438 U	1.06 U	NA	NA	1.24 U
VANADIUM	19.5	31.2	33.1	32.3	28.2	NA	NA	22.4	13.8	13.8	NA	NA	51.2
ZINC	127 J	485 J	34.4	38.1	83.2 J	NA	NA	12.1	38.4	41.2 J	NA	NA	54
METALS (UG/KG)													
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LITHIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)													
ACTINOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMOSITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHOPHYLLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ASBESTOS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYBOTILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CROCIDOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TREMOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB001				23SB002						23SB003		
SAMPLE ID	23SS001-0002	23SS001-0002-D	23SB001-1012	23SB001-1012-D	23SS002-0002	23SB0020204	23SB0020406	23SB002-1012	23SS003-0002	23SS003-0002-D	23SB0030204	23SB0030406	23SB003-0810
SAMPLE DATE	20121007	20121007	20121007	20121007	20121007	20140326	20140326	20121007	20121007	20121007	20140326	20140326	20121007
SAMPLE CODE	NORMAL	DUP	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SB	SS	SB	SB	SB	SS	SS	SB	SB	SB
TOP DEPTH	0	0	10	10	0	2	4	10	0	0	2	4	8
BOTTOM DEPTH	2	2	12	12	2	4	6	12	2	2	4	6	10
MISCELLANEOUS PARAMETERS (F)													
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/													
SULFATE	38.7 J	25.8 J	NA	NA	6.12 J	NA	NA	NA	69.9 J	11 UJ	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)													
PH	7.77	8.29	NA	NA	7.98	NA	NA	NA	8.74	8.59	NA	NA	NA
MISCELLANEOUS PARAMETERS (UG/													
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES													
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEPP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)													
AROCLOR-1016	0.0193 UJ	0.187 U	NA	NA	0.0371 UJ	NA	NA	NA	0.00182 UJ	0.00179 UJ	NA	NA	NA
AROCLOR-1221	0.0193 UJ	0.187 U	NA	NA	0.0371 UJ	NA	NA	NA	0.00182 UJ	0.00179 UJ	NA	NA	NA
AROCLOR-1232	0.0193 UJ	0.187 U	NA	NA	0.0371 UJ	NA	NA	NA	0.00182 UJ	0.00179 UJ	NA	NA	NA
AROCLOR-1242	0.0193 UJ	0.187 U	NA	NA	0.0371 UJ	NA	NA	NA	0.00182 UJ	0.00179 UJ	NA	NA	NA
AROCLOR-1248	0.0193 UJ	0.187 U	NA	NA	0.0371 UJ	NA	NA	NA	0.00182 UJ	0.00179 UJ	NA	NA	NA
AROCLOR-1254	0.191 J	3.29 J	NA	NA	0.0371 UJ	NA	NA	NA	0.00182 UJ	0.00179 UJ	NA	NA	NA
AROCLOR-1260	0.186 J	0.187 UJ	NA	NA	0.0371 UJ	NA	NA	NA	0.00746 J	0.00537 J	NA	NA	NA
PESTICIDES/PCBS (UG/KG)													
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K													
DRO (C08-C28)	35.7 J	75.4 J	2220	1850	98.9 J	NA	NA	7.56 U	25.9	43.7	NA	NA	7.96 U
DRO (C08-C34)	71.4 J	156 J	3490	3010	148 J	NA	NA	8.53 J	64.2	102	NA	NA	10.6 J
GASOLINE RANGE ORGANICS	5.29 U	4.43 U	4.75 J	4.36 U	4.76 U	NA	NA	4.55 U	4.72 U	6.07 J	NA	NA	4.75 U
POLYCYCLIC AROMATIC HYDROCARB													
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	0.046 U	0.0041 U	NA	NA	NA	0.037 U	0.004 U	NA
2-METHYLNAPHTHALENE	0.0187 U	0.0195 J	0.0185 U	0.0184 U	0.0375 U	0.046 U	0.0041 U	0.00383 U	0.0217 J	0.0188 J	0.037 U	0.004 U	0.00391 U
ACENAPHTHENE	0.0187 U	0.0187 U	0.0185 U	0.0184 U	0.0375 U	0.046 U	0.0041 U	0.00383 U	0.0181 J	0.0179 U	0.037 U	0.004 U	0.00391 U
ACENAPHTHYLENE	0.0187 U	0.0187 U	0.0546	0.0184 U	0.442	0.046 U	0.0041 U	0.00383 U	0.384 J	0.079 J	0.037 U	0.004 U	0.0105
ANTHRACENE	0.0187 U	0.021 J	0.0185 U	0.0184 U	0.277 J	0.046 U	0.0041 U	0.00383 U	1.03 J	0.126 J	0.037 U	0.004 U	0.00427 J
BAP EQUIVALENT-HALFND	0.1067887	NA	0.0185 U	NA	3.81559	0.08876	0.0081566	0.00383 U	4.60075	NA	0.51836	0.004 U	0.0852781
BAP EQUIVALENT-POS	0.0974387	NA	0.0185 U	NA	3.81559	0.06116	0.0059016	0.00383 U	4.60075	NA	0.51836	0.004 U	0.0852781
BENZO(A)ANTHRACENE	0.0463 J	0.0799 J	0.0185 U	0.0184 U	1.37	0.046 U	0.005 J	0.00383 U	3.22 J	0.706 J	0.24	0.004 U	0.0299
BENZO(A)PYRENE	0.0757	0.103	0.0185 U	0.0184 UJ	2.51	0.051 J	0.0045 J	0.00383 U	3.03 J	0.858 J	0.33	0.004 U	0.0565
BENZO(B)FLUORANTHENE	0.0963	0.129	0.0185 U	0.0184 UJ	2.9	0.098	0.0087	0.00383 U	3.62 J	1.04 J	0.66	0.004 U	0.0643
BENZO(G,H,I)PERYLENE	0.0844	0.104	0.043	0.0184 UJ	2.56	0.046 J	0.0041 U	0.00383 U	1.93 J	0.761 J	0.26	0.004 U	0.0578
BENZO(K)FLUORANTHENE	0.0574 J	0.101 J	0.0185 U	0.0184 UJ	1.99	0.031 J	0.0025 J	0.00383 U	3 J	0.813 J	0.2	0.004 U	0.0445
CHRYSENE	0.0647 J	0.115 J	0.0185 U	0.0184 U	1.69	0.05 J	0.0066 J	0.00383 U	3.75 J	0.876 J	0.36	0.004 U	0.0431





Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB001				23SB002						23SB003		
SAMPLE ID	23SS001-0002	23SS001-0002-D	23SB001-1012	23SB001-1012-D	23SS002-0002	23SB0020204	23SB0020406	23SB002-1012	23SS003-0002	23SS003-0002-D	23SB0030204	23SB0030406	23SB003-0810
SAMPLE DATE	20121007	20121007	20121007	20121007	20121007	20140326	20140326	20121007	20121007	20121007	20140326	20140326	20121007
SAMPLE CODE	NORMAL	DUP	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SB	SS	SB	SB	SB	SS	SS	SB	SB	SB
TOP DEPTH	0	0	10	10	0	2	4	10	0	0	2	4	8
BOTTOM DEPTH	2	2	12	12	2	4	6	12	2	2	4	6	10
TCLP VOLATILES (UG/L)													
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (MG/KG)													
1,1,1,2-TETRACHLOROETHANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
1,1,1-TRICHLOROETHANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
1,1,2,2-TETRACHLOROETHANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
1,1,2-TRICHLOROETHANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
1,1-DICHLOROETHANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
1,1-DICHLOROETHENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
1,2,3-TRICHLOROPROPANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
1,2-DIBROMO-3-CHLOROPROPANE	0.00691 UJ	0.222 UJ	0.00425 U	0.218 UJ	0.00481 U	NA	NA	0.227 UJ	0.00488 U	0.247 UJ	NA	NA	0.0048 U
1,2-DIBROMOETHANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
1,2-DICHLOROETHANE	0.00346 UJ	0.111 UJ	0.00212 UJ	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 UJ	0.124 UJ	NA	NA	0.0024 UJ
1,2-DICHLOROPROPANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
2-BUTANONE	0.0405 J	0.222 UJ	0.0043 J	0.218 UJ	0.00714 J	NA	NA	0.227 UJ	0.00532 J	0.247 UJ	NA	NA	0.00553 J
2-HEXANONE	0.00691 UJ	0.222 UJ	0.00425 U	0.218 UJ	0.00481 U	NA	NA	0.227 UJ	0.00488 U	0.247 UJ	NA	NA	0.0048 U
3-CHLOROPROPENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
4-METHYL-2-PENTANONE	0.00691 UJ	0.222 UJ	0.00425 U	0.218 UJ	0.00481 U	NA	NA	0.227 UJ	0.00488 U	0.247 UJ	NA	NA	0.0048 U
ACETONE	0.234 J	0.443 UJ	0.024	0.436 UJ	0.0601	NA	NA	0.455 UJ	0.0714	0.495 UJ	NA	NA	0.101
ACETONITRILE	0.0346 UR	1.11 UR	0.0212 UR	1.09 UR	0.0241 UR	NA	NA	1.14 UR	0.0244 UR	1.24 UR	NA	NA	0.024 UR
ACROLEIN	0.0138 UR	0.443 UR	0.0085 UR	0.436 UR	0.00963 UR	NA	NA	0.455 UR	0.00977 UR	0.495 UR	NA	NA	0.00961 UR
ACRYLONITRILE	0.0138 UJ	0.443 UJ	0.0085 U	0.436 UJ	0.00963 U	NA	NA	0.455 UJ	0.00977 U	0.495 UJ	NA	NA	0.00961 U
BENZENE	0.0018 J	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00167 J	0.124 UJ	NA	NA	0.0024 U
BROMODICHLOROMETHANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
BROMOFORM	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
BROMOMETHANE	0.00691 UJ	0.222 UJ	0.00425 UJ	0.218 UJ	0.00481 UJ	NA	NA	0.227 UJ	0.00488 UJ	0.247 UJ	NA	NA	0.0048 UJ
CARBON DISULFIDE	0.00888 J	0.111 UJ	0.00113 J	0.109 UJ	0.00414 J	NA	NA	0.114 UJ	0.00586	0.124 UJ	NA	NA	0.0024 U
CARBON TETRACHLORIDE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
CHLOROBENZENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
CHLORODIBROMOMETHANE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
CHLOROETHANE	0.00691 UJ	0.222 UJ	0.00425 UJ	0.218 UJ	0.00481 UJ	NA	NA	0.227 UJ	0.00488 UJ	0.247 UJ	NA	NA	0.0048 UJ
CHLOROFORM	0.00514 J	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
CHLOROMETHANE	0.00691 UJ	0.222 UJ	0.00425 UJ	0.218 UJ	0.00481 UJ	NA	NA	0.227 UJ	0.00488 UJ	0.247 UJ	NA	NA	0.0048 UJ
CHLOROPRENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
CIS-1,2-DICHLOROETHENE	0.00346 UJ	0.111 UJ	0.0012 J	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
CIS-1,3-DICHLOROPROPENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
DIBROMOMETHANE	0.00346 UJ	0.111 UJ	0.00212 UJ	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 UJ	0.124 UJ	NA	NA	0.0024 UJ
DICHLORODIFLUOROMETHANE	0.00691 UJ	0.222 UJ	0.00425 UJ	0.218 UJ	0.00481 UJ	NA	NA	0.227 UJ	0.00488 UJ	0.247 UJ	NA	NA	0.0048 UJ
ETHYL METHACRYLATE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
ETHYLBENZENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
ISOBUTANOL	0.0553 UJ	1.77 UJ	0.034 U	1.74 UJ	0.0385 U	NA	NA	1.82 UJ	0.0391 U	1.98 UJ	NA	NA	0.0384 U
METHACRYLONITRILE	0.0346 UJ	1.11 UJ	0.0212 U	1.09 UJ	0.0241 U	NA	NA	1.14 UJ	0.0244 U	1.24 UJ	NA	NA	0.024 U
METHYL IODIDE	0.0138 UJ	0.443 UJ	0.0085 U	0.436 UJ	0.00963 U	NA	NA	0.455 UJ	0.00977 U	0.495 UJ	NA	NA	0.00961 U
METHYL METHACRYLATE	0.00346 UJ	0.111 UJ	0.00212 UJ	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 UJ	0.124 UJ	NA	NA	0.0024 UJ
METHYLENE CHLORIDE	0.00691 UJ	0.137 J	0.00425 U	0.218 UJ	0.00481 U	NA	NA	0.227 UJ	0.00279 J	1.45 J	NA	NA	0.0048 U
PROPIONITRILE	0.0346 UR	1.11 UR	0.0212 UR	1.09 UR	0.0241 UR	NA	NA	1.14 UR	0.0244 UR	1.24 UR	NA	NA	0.024 UR
STYRENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
TETRACHLOROETHENE	0.00539 J	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
TOLUENE	0.0094 J	0.111 UJ	0.00378 J	0.109 UJ	0.00131 J	NA	NA	0.114 UJ	0.00345 J	0.124 UJ	NA	NA	0.00178 J
TOTAL XYLENES	0.0104 UJ	0.333 UJ	0.00637 U	0.327 UJ	0.00722 UJ	NA	NA	0.341 UJ	0.00732 U	0.371 UJ	NA	NA	0.00721 U
TRANS-1,2-DICHLOROETHENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
TRANS-1,3-DICHLOROPROPENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
TRANS-1,4-DICHLORO-2-BUTENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 U	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
TRICHLOROETHENE	0.00346 UJ	0.111 UJ	0.00212 U	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 U	0.124 UJ	NA	NA	0.0024 U
TRICHLOROFLUOROMETHANE	0.00691 UJ	0.222 UJ	0.00425 UJ	0.218 UJ	0.00481 UJ	NA	NA	0.227 UJ	0.00488 UJ	0.247 UJ	NA	NA	0.0048 UJ
VINYL ACETATE	0.00691 UJ	0.222 UJ	0.00425 U	0.218 UJ	0.00481 UJ	NA	NA	0.227 UJ	0.00488 U	0.247 UJ	NA	NA	0.0048 U
VINYL CHLORIDE	0.00346 UJ	0.111 UJ	0.00144 J	0.109 UJ	0.00241 UJ	NA	NA	0.114 UJ	0.00244 UJ	0.124 UJ	NA	NA	0.0024 UJ







Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB004		23SB005		23SB006		23SB007	23SB008	23SB009	23SB010	23SB011	23SB012	23SB013	23SB014
SAMPLE ID	23SS004-0002	23SB004-0810	23SS005-0002	23SB005-0810	23SS006-0002	23SB006-0608	23SS007-0002	23SS008-0002	23SS009-0002	23SS010-0002	23SS011-0002	23SS012-0002	23SS013-0002	23SS014-0002
SAMPLE DATE	20121007	20121007	20121007	20121007	20121007	20121007	20121101	20121101	20121101	20121101	20121101	20121101	20121101	20121031
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SS	SB	SS	SB	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	8	0	8	0	6	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	10	2	10	2	8	1.8	0.8	1.2	1.6	1.8	2	1.9	0.5
MISCELLANEOUS PARAMETERS (F)														
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/														
SULFATE	11.3 UJ	NA	10 J	NA	46.6 J	NA	13.1 U	12.5 U	12.1 J	18.3 J	12 U	11.7 U	12.6 U	12.9 U
MISCELLANEOUS PARAMETERS (S.U.)														
PH	8.07	NA	8.19	NA	8.91	NA	6.85	5.97	7.76	8.04	5.68	6.87	6.99	7.99
MISCELLANEOUS PARAMETERS (UG/I														
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES														
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)														
AROCLOR-1016	0.00182 UJ	NA	0.00184 UJ	NA	0.00179 UJ	NA	0.00214 U	0.00201 UJ	0.00225 UJ	0.00204 UJ	0.00192 U	0.00193 UJ	0.00204 U	0.0397 UJ
AROCLOR-1221	0.00182 UJ	NA	0.00184 UJ	NA	0.00179 UJ	NA	0.00214 U	0.00201 UJ	0.00225 UJ	0.00204 UJ	0.00192 U	0.00193 UJ	0.00204 U	0.0397 UJ
AROCLOR-1232	0.00182 UJ	NA	0.00184 UJ	NA	0.00179 UJ	NA	0.00214 U	0.00201 UJ	0.00225 UJ	0.00204 UJ	0.00192 U	0.00193 UJ	0.00204 U	0.0397 UJ
AROCLOR-1242	0.00182 UJ	NA	0.00184 UJ	NA	0.00179 UJ	NA	0.00214 U	0.00201 UJ	0.00225 UJ	0.00204 UJ	0.00192 U	0.00193 UJ	0.00204 U	0.0397 UJ
AROCLOR-1248	0.00182 UJ	NA	0.00184 UJ	NA	0.00179 UJ	NA	0.00214 U	0.00201 UJ	0.00225 UJ	0.00204 UJ	0.00192 U	0.00193 UJ	0.00204 U	0.0397 UJ
AROCLOR-1254	0.00182 UJ	NA	0.00184 UJ	NA	0.00179 UJ	NA	0.00214 U	0.00201 UJ	0.00225 UJ	0.0478 J	0.00192 U	0.00193 UJ	0.00293 J	0.00962 J
AROCLOR-1260	0.00928 J	NA	0.00184 UJ	NA	0.00179 UJ	NA	0.00262 J	0.00201 UJ	0.0054 J	0.0759 J	0.00192 U	0.00193 UJ	0.165	0.0317 J
PESTICIDES/PCBS (UG/KG)														
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K														
DRO (C08-C28)	104	7.66 U	7.49 U	7.53 U	869	108	16 J	17.2	15.7 J	73.8	9.69 J	69	43	25.6
DRO (C08-C34)	147	9.53 J	12 J	11 J	1800	215	30.1	33.6	30.2	130	20.1	88.5	75.6	49.3
GASOLINE RANGE ORGANICS	4.33 U	4.62 U	4.33 U	4.28 U	3.84 U	4.91 U	5.52 U	6.38 U	5.16 U	4.59 U	4.75 U	5.81 U	55.3	21 J
POLYCYCLIC AROMATIC HYDROCARB														
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.0256 J	0.00369 U	0.00367 U	0.00365 U	0.0369 U	0.00414 U	0.00417 U	0.00402 U	0.00431 U	0.0397 U	0.00384 U	0.00373 U	0.00422 U	0.0407 U
ACENAPHTHENE	0.241	0.00369 U	0.00367 U	0.00365 U	0.0369 U	0.00414 U	0.00417 U	0.00402 U	0.00431 U	0.0397 U	0.00384 U	0.00373 U	0.00422 U	0.0407 U
ACENAPHTHYLENE	0.0351 J	0.00369 U	0.00432 J	0.00365 U	0.0369 U	0.00554 J	0.00417 U	0.00402 U	0.00431 U	0.0397 U	0.00384 U	0.00373 U	0.00422 U	0.0407 U
ANTHRACENE	0.686	0.00369 U	0.00367 U	0.00365 U	0.0369 U	0.00414 U	0.00417 U	0.00402 U	0.00431 U	0.0439 J	0.00384 U	0.00373 U	0.00422 U	0.0407 U
BAP EQUIVALENT-HALFND	2.19053	0.00369 U	0.0407065	0.00365 U	0.046183	0.0055163	0.0123396	0.0055538	0.0458075	0.411404	0.0044405	0.0057777	0.0105551	0.185334
BAP EQUIVALENT-POS	2.19053	0.00369 U	0.0407065	0.00365 U	0.00539	0.0009416	0.010044	0.0013328	0.0458075	0.411404	5.31E-06	0.0018425	0.0063351	0.164984
BENZO(A)ANTHRACENE	1.61	0.00369 U	0.0155	0.00365 U	0.0369 U	0.00414 U	0.00417 U	0.00402 U	0.0156	0.164	0.00384 U	0.00505 J	0.0206	0.0774 J
BENZO(A)PYRENE	1.45	0.00369 U	0.0273	0.00365 U	0.0369 U	0.00414 U	0.00825 J	0.00402 U	0.0251	0.228	0.00384 U	0.00373 U	0.00422 U	0.129
BENZO(B)FLUORANTHENE	1.47	0.00369 U	0.0319	0.00365 U	0.0369 U	0.00414 U	0.0123	0.00775 J	0.0299	0.285	0.00384 U	0.0133	0.0249	0.149
BENZO(G,H,I)PERYLENE	0.901	0.00369 U	0.0207	0.00365 U	0.181	0.018	0.00568 J	0.00402 U	0.0308	0.305	0.00384 U	0.00373 U	0.0173	0.183
BENZO(K)FLUORANTHENE	1.2	0.00369 U	0.0211	0.00365 U	0.0369 U	0.00414 U	0.0071 J	0.00499 J	0.0236	0.191	0.00384 U	0.00373 U	0.0206	0.063 J
CHRYSENE	1.63	0.00369 U	0.0255	0.00365 U	0.0369 U	0.00663 J	0.00417 U	0.00694 J	0.0215	0.194	0.00531 J	0.00751	0.0291	0.114

[illegible]



Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB004		23SB005		23SB006		23SB007	23SB008	23SB009	23SB010	23SB011	23SB012	23SB013	23SB014
SAMPLE ID	23SS004-0002	23SB004-0810	23SS005-0002	23SB005-0810	23SS006-0002	23SB006-0608	23SS007-0002	23SS008-0002	23SS009-0002	23SS010-0002	23SS011-0002	23SS012-0002	23SS013-0002	23SS014-0002
SAMPLE DATE	20121007	20121007	20121007	20121007	20121007	20121007	20121101	20121101	20121101	20121101	20121101	20121101	20121101	20121031
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SS	SB	SS	SB	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	8	0	8	0	6	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	10	2	10	2	8	1.8	0.8	1.2	1.6	1.8	2	1.9	0.5
TCLP VOLATILES (UG/L)														
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (MG/KG)														
1,1,1,2-TETRACHLOROETHANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,1,1-TRICHLOROETHANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,1,2,2-TETRACHLOROETHANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,1,2-TRICHLOROETHANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,1-DICHLOROETHANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,1-DICHLOROETHENE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,2,3-TRICHLOROPROPANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,2-DIBROMO-3-CHLOROPROPANE	0.00526 U	0.00444 U	0.216 UJ	0.00453 U	0.00447 U	0.00494 U	0.00596 U	0.00692 U	0.00559 U	0.00464 U	0.00489 U	0.00512 U	0.00533 U	0.00518 U
1,2-DIBROMOETHANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,2-DICHLOROETHANE	0.00263 UJ	0.00222 UJ	0.108 UJ	0.00227 UJ	0.00224 UJ	0.00247 UJ	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
1,2-DICHLOROPROPANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
2-BUTANONE	0.00702 J	0.00444 U	0.216 UJ	0.00453 U	0.00774 J	0.00494 U	0.00596 U	0.00692 U	0.00559 U	0.00464 U	0.00489 U	0.00512 U	0.00533 U	0.00518 U
2-HEXANONE	0.00526 U	0.00444 U	0.216 UJ	0.00453 U	0.00447 U	0.00494 U	0.00596 U	0.00692 U	0.00559 U	0.00464 U	0.00489 U	0.00512 U	0.00533 U	0.00518 U
3-CHLOROPROPENE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
4-METHYL-2-PENTANONE	0.00526 U	0.00444 U	0.216 UJ	0.00453 U	0.00447 U	0.00494 U	0.00596 U	0.00692 U	0.00559 U	0.00464 U	0.00489 U	0.00512 U	0.00533 U	0.00518 U
ACETONE	0.071	0.00889 U	0.433 UJ	0.00666 J	0.0913	0.0148 J	0.00733 J	0.0379 J	0.0112 UJ	0.00929 UJ	0.0114 J	0.0102 UJ	0.0107 UJ	0.0104 UJ
ACETONITRILE	0.0263 UR	0.0222 UR	1.08 UR	0.0227 UR	0.0224 UR	0.0247 UR	0.0298 UR	0.0346 UR	0.0279 UR	0.0232 UR	0.0244 UR	0.0256 UR	0.0267 UR	0.0259 UR
ACROLEIN	0.0105 UR	0.00889 UR	0.433 UR	0.00907 UR	0.00895 UR	0.00987 UR	0.0119 UR	0.0138 UR	0.0112 UR	0.00929 UR	0.00977 UR	0.0102 UR	0.0107 UR	0.0104 UR
ACRYLONITRILE	0.0105 U	0.00889 U	0.433 UJ	0.00907 U	0.00895 U	0.00987 U	0.0119 U	0.0138 U	0.0112 U	0.00929 U	0.00977 U	0.0102 U	0.0107 U	0.0104 U
BENZENE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
BROMODICHLROMETHANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
BROMOFORM	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
BROMOMETHANE	0.00526 UJ	0.00444 UJ	0.216 UJ	0.00453 UJ	0.00447 UJ	0.00494 UJ	0.00596 UJ	0.00692 UJ	0.00559 UJ	0.00464 UJ	0.00489 UJ	0.00512 UJ	0.00533 UJ	0.00518 UJ
CARBON DISULFIDE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
CARBON TETRACHLORIDE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
CHLOROBENZENE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
CHLORODIBROMOMETHANE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
CHLOROETHANE	0.00526 UJ	0.00444 UJ	0.216 UJ	0.00453 UJ	0.00447 UJ	0.00494 UJ	0.00596 U	0.00692 U	0.00559 U	0.00464 U	0.00489 U	0.00512 U	0.00533 U	0.00518 U
CHLOROFORM	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
CHLOROMETHANE	0.00526 UJ	0.00444 UJ	0.216 UJ	0.00453 UJ	0.00447 UJ	0.00494 UJ	0.00596 U	0.00692 U	0.00559 U	0.00464 U	0.00489 U	0.00512 U	0.00533 U	0.00518 U
CHLOROPRENE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
CIS-1,2-DICHLOROETHENE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.00298 U	0.00346 U	0.00279 U	0.00232 U	0.00244 U	0.00256 U	0.00267 U	0.00259 U
CIS-1,3-DICHLOROPROPENE	0.00263 U	0.00222 U	0.108 UJ	0.00227 U	0.00224 U	0.00247 U	0.0.							





**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB015 23SS015-0002 20121031 NORMAL SO NORMAL SS 0 0.8	23SB016 23SS016-0002 20121031 NORMAL SO NORMAL SS 0 0.3	23SB017 23SS017-0002 20121031 NORMAL SO NORMAL SS 0 1.3	23SB018 23SS018-0002 20121101 NORMAL SO NORMAL SS 0 1.6	23SB019 23SS019-0002 20121101 NORMAL SO NORMAL SS 0 2	23SB020 23SS020-0002 20121101 NORMAL SO NORMAL SS 0 1.6	23SB021 23SS021-0002 20121101 NORMAL SO NORMAL SS 0 2	23SB022 23SS022-0002 20121101 NORMAL SO NORMAL SS 0 1.8	23SB023 23SS023-0002 20121101 NORMAL SO NORMAL SS 0 2	23SB024 23SS024-0406 20121007 NORMAL SO NORMAL SB 4 6	23SB024-0608 20121007 NORMAL SO NORMAL SB 6 8	23SB025-0406 20121007 NORMAL SO NORMAL SB 4 6	23SB025-0608 20121007 NORMAL SO NORMAL SB 6 8	
DIOXINS/FURANS (UG/KG)														
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,6,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,7,8,9-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,7,8,9-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,7,8-PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,3,4,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,3,4,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TEQ WHO-2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TEQ WHO-2007 - HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HERBICIDES (UG/KG)														
2,4,5-T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
METALS (MG/KG)														
ANTIMONY	2.39 U	2.52 U	6.49	2.61 U	2.46 U	2.76 U	2.6 U	2.56 U	2.72 U	2.22 U	2.06 U	2.33 U	2.37 U	
ARSENIC	6.19	9.32	8.27	5.3	3.64	5.67	3.94	3.51	4.11	19.7	3.51	1.28 J	6.82	
BARIUM	73.4	104	65.9	96.1	63.1	113	66	51.2	114	11.8	8.52 J	31.5	74.9	
BERYLLIUM	0.511 J	0.666 J	0.463 J	0.606 J	0.585 J	0.963 J	0.47 J	0.571 J	0.663 J	0.556 U	0.515 U	0.582 U	0.795 J	
CADMIUM	0.597 U	0.631 U	0.355 J	0.653 U	0.614 U	0.689 U	0.65 U	0.64 U	0.679 U	0.556 U	0.515 U	0.582 U	0.618 J	
CHROMIUM	19.9	18.9	22.8	13.5	12.7	12.3	12.3	9.94	8.65	12.6	7.4	7.06	21.2	
COBALT	7.38	9.12	5.62	8.61	11.6	9.82	12.8	14.6	8.22	2.78 U	2.57 U	2.71 J	11.4	
COPPER	26.5	19	26.8	8.62	7.92	12.2	8.29	6.74	9.67	41.3	4.81	5.26	18.4	
LEAD	79	70.2	1920	18.5	11.6	22.9	16.5	12.7	27.4	17.7	5.56	11.2	19.3	
MERCURY	0.123	0.0784	0.0815	0.0562	0.0411 J	0.0685	0.0462	0.065	0.0762	0.0882	0.0448	0.0263 J	0.022 J	
NICKEL	12.5	15.6	11.3	10	11.5	19.4	14.8	14.2	11.9	4.3	2.14 J	6.09	18	
SELENIUM	1.49 U	1.58 U	1.77 U	1.63 U	1.54 U	1.72 U	1.63 U	1.6 U	1.7 U	1.39 U	1.29 U	1.46 U	1.48 U	
SILVER	0.597 U	0.631 U	0.708 U	0.653 U	0.614 U	0.689 U	0.65 U	0.64 U	0.679 U	0.556 U	0.515 U	0.582 U	0.593 U	
THALLIUM	1.19 U	1.26 U	1.42 U	1.31 U	1.23 U	1.38 U	1.3 U	1.28 U	1.36 U	1.11 U	1.03 U	1.16 U	1.19 U	
VANADIUM	26.6	23.4	22.6	21.7	14.9	20.4	19.4	14.2	12.9	16	6.39	6.23	31.3	
ZINC	63.3	53.2	112	37.7	40.4	51.1	45.1	45.1	44.7	7.59 U	3.85 U	15.8	74.3	
METALS (UG/KG)														
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
LITHIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MISCELLANEOUS PARAMETERS (%)														
ACTINOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
AMOSITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ANTHOPHYLLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ASBESTOS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CHRYSOTILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CROCIDOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TREMOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB015	23SB016	23SB017	23SB018	23SB019	23SB020	23SB021	23SB022	23SB023	23SB024		23SB025	
SAMPLE ID	23SS015-0002	23SS016-0002	23SS017-0002	23SS018-0002	23SS019-0002	23SS020-0002	23SS021-0002	23SS022-0002	23SS023-0002	23SB024-0406	23SB024-0608	23SB025-0406	23SB025-0608
SAMPLE DATE	20121031	20121031	20121031	20121101	20121101	20121101	20121101	20121101	20121101	20121007	20121007	20121007	20121007
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SB	SB	SB	SB
TOP DEPTH	0	0	0	0	0	0	0	0	0	4	6	4	6
BOTTOM DEPTH	0.8	0.3	1.3	1.6	2	1.6	2	1.8	2	6	8	6	8
MISCELLANEOUS PARAMETERS (F)													
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/													
SULFATE	11.4 U	12.9 U	14 U	12.7 U	9.87 J	13.4 U	13 J	13 U	13.9 U	33.4 J	NA	95.9 J	NA
MISCELLANEOUS PARAMETERS (S.U.)													
PH	8.23	7.97	7.92	6.62	6.35	6.83	5.69	6.11	6.6	8.5	NA	8.8	NA
MISCELLANEOUS PARAMETERS (UG/I													
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES													
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEPP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)													
AROCLOR-1016	0.175 U	0.00212 U	0.0294 U	0.00209 U	0.00195 U	0.00223 U	0.00204 UJ	0.00211 U	0.00231 U	0.00184 UJ	NA	0.0018 UJ	NA
AROCLOR-1221	0.175 U	0.00212 U	0.0294 U	0.00209 U	0.00195 U	0.00223 U	0.00204 UJ	0.00211 U	0.00231 U	0.00184 UJ	NA	0.0018 UJ	NA
AROCLOR-1232	0.175 U	0.00212 U	0.0294 U	0.00209 U	0.00195 U	0.00223 U	0.00204 UJ	0.00211 U	0.00231 U	0.00184 UJ	NA	0.0018 UJ	NA
AROCLOR-1242	0.175 U	0.00212 U	0.0294 U	0.00209 U	0.00195 U	0.00223 U	0.00204 UJ	0.00211 U	0.00231 U	0.00184 UJ	NA	0.0018 UJ	NA
AROCLOR-1248	0.0384 U	0.00212 U	0.0294 U	0.00209 U	0.00195 U	0.00223 U	0.00204 UJ	0.00211 U	0.00231 U	0.00184 UJ	NA	0.0018 UJ	NA
AROCLOR-1254	0.0384 U	0.00212 U	0.0154 J	0.00127 J	0.00162 J	0.00223 U	0.00204 UJ	0.00185 J	0.00158 J	0.00184 UJ	NA	0.0018 UJ	NA
AROCLOR-1260	0.0341	0.0046 J	0.0134	0.00384 J	0.00195 U	0.00398 J	0.00204 UJ	0.00208 J	0.018	0.00184 UJ	NA	0.0018 UJ	NA
PESTICIDES/PCBS (UG/KG)													
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K													
DRO (C08-C28)	28.8	13.7 J	50.3	20.2	11.3 J	18.9	19.8	14.7 J	21.1	7.58 U	7.15 U	11.5 J	18.3
DRO (C08-C34)	61.2	27.9	85.9	42.3	24.2	54.6	76	65.4	61.6	10.3 J	9.11 J	32.7	33.3
GASOLINE RANGE ORGANICS	5.62 U	6.36 U	7.45 U	6.27 U	5.54 U	6.32 U	5.78 U	5.96 U	6.15 U	5.32 U	4.91 U	5.2 U	5.46 U
POLYCYCLIC AROMATIC HYDROCARB													
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.00366 U	0.00412 U	0.0464 U	0.00422 U	0.00392 U	0.00436 U	0.00408 U	0.00426 U	0.00463 U	0.00369 U	0.00358 U	0.0182 U	0.0369 U
ACENAPHTHENE	0.00366 U	0.00412 U	0.0464 U	0.00422 U	0.00392 U	0.00436 U	0.00408 U	0.00426 U	0.00463 U	0.00369 U	0.00358 U	0.0182 U	0.0369 U
ACENAPHTHYLENE	0.00366 U	0.00412 U	0.0464 U	0.00422 U	0.00392 U	0.00436 U	0.00408 U	0.00426 U	0.00463 U	0.00369 U	0.00358 U	0.0182 U	0.0369 U
ANTHRACENE	0.00767 U	0.00412 U	0.0464 U	0.00422 U	0.00392 U	0.00436 U	0.00408 U	0.00426 U	0.00463 U	0.00369 U	0.00358 U	0.0182 U	0.0369 U
BAP EQUIVALENT-HALFND	0.0645666	0.0317066	0.0628782	0.0051572	0.00392 U	0.0195113	0.0147249	0.0138514	0.0171978	0.00369 U	0.00358 U	0.0182 U	0.0369 U
BAP EQUIVALENT-POS	0.0645666	0.0296466	0.014135	0.000492	0.00392 U	0.0171111	0.0122749	0.0117214	0.014649	0.00369 U	0.00358 U	0.0182 U	0.0369 U
BENZO(A)ANTHRACENE	0.0306	0.0113	0.0464 U	0.00422 U	0.00392 U	0.00436 U	0.00408 U	0.00812 J	0.00463 U	0.00369 U	0.00358 U	0.0182 U	0.0369 U
BENZO(A)PYRENE	0.0396	0.025	0.0464 U	0.00422 U	0.00392 U	0.0149	0.0115	0.00919	0.0122	0.00369 U	0.00358 U	0.0182 U	0.0369 U
BENZO(B)FLUORANTHENE	0.0379	0.0144	0.0525 J	0.00492 J	0.00392 U	0.0102	0.00713 J	0.00955	0.0143	0.00369 U	0.00358 U	0.0182 U	0.0369 U
BENZO(G,H,I)PERYLENE	0.0381	0.0219	0.0952	0.00422 U	0.00392 U	0.01	0.00408 U	0.00702 J	0.0109	0.00369 U	0.00358 U	0.0182 U	0.0369 U
BENZO(K)FLUORANTHENE	0.0317	0.0169	0.0685 J	0.00422 U	0.00392 U	0.00711 J	0.00619 J	0.00695 J	0.0122	0.00369 U	0.00358 U	0.0182 U	0.0369 U
CHRYSENE	0.0396	0.0176	0.0464 U	0.00422 U	0.00392 U	0.00436 U	0.00408 U	0.0109	0.00463 U	0.00369 U	0.00358 U	0.0182 U	0.0369 U

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB015	23SB016	23SB017	23SB018	23SB019	23SB020	23SB021	23SB022	23SB023	23SB024		23SB025	
SAMPLE ID	23SS015-0002	23SS016-0002	23SS017-0002	23SS018-0002	23SS019-0002	23SS020-0002	23SS021-0002	23SS022-0002	23SS023-0002	23SB024-0406	23SB024-0608	23SB025-0406	23SB025-0608
SAMPLE DATE	20121031	20121031	20121031	20121101	20121101	20121101	20121101	20121101	20121101	20121007	20121007	20121007	20121007
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SB	SB	SB	SB
TOP DEPTH	0	0	0	0	0	0	0	0	0	4	6	4	6
BOTTOM DEPTH	0.8	0.3	1.3	1.6	2	1.6	2	1.8	2	6	8	6	8
TCLP VOLATILES (UG/L)													
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (MG/KG)													
1,1,1,2-TETRACHLOROETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,1,1-TRICHLOROETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,1,1,2-TETRACHLOROETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,1,2-TRICHLOROETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,1-DICHLOROETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,1-DICHLOROETHENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,2,3-TRICHLOROPROPANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
1,2-DIBROMOETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,2-DICHLOROETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00124 J	0.00327 U	0.00145 J	0.00143 J	0.00153 J	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
1,2-DICHLOROPROPANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
2-BUTANONE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.0118	0.00592 J	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
2-HEXANONE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
3-CHLOROPROPENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
4-METHYL-2-PENTANONE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
ACETONE	0.0103 UJ	0.011 UJ	0.0125 UJ	0.00942 J	0.00967 UJ	0.0132 J	0.0114 J	0.0693 J	0.0912 J	0.532 UJ	0.491 UJ	0.52 UJ	0.546 UJ
ACETONITRILE	0.0257 UR	0.0274 UR	0.0312 UR	0.0257 UR	0.0242 UR	0.0327 UR	0.0279 UR	0.0274 UR	0.0289 UR	1.33 UR	1.23 UR	1.3 UR	1.36 UR
ACROLEIN	0.0103 UR	0.011 UR	0.0125 UR	0.0103 UR	0.00967 UR	0.0131 UR	0.0111 UR	0.011 UR	0.0116 UR	0.532 UR	0.491 UR	0.52 UR	0.546 UR
ACRYLONITRILE	0.0103 U	0.011 U	0.0125 U	0.0103 U	0.00967 U	0.0111 U	0.011 U	0.011 U	0.0116 U	0.532 UJ	0.491 UJ	0.52 UJ	0.546 UJ
BENZENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
BROMODICHLOROMETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
BROMOFORM	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
BROMOMETHANE	0.00514 UJ	0.00549 UJ	0.00625 UJ	0.00515 UJ	0.00483 UJ	0.00654 UJ	0.00557 UJ	0.00549 UJ	0.00578 UJ	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
CARBON DISULFIDE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
CARBON TETRACHLORIDE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
CHLOROBENZENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
CHLORODIBROMOMETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
CHLOROETHANE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
CHLOROFORM	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
CHLOROMETHANE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
CHLOROPRENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
CIS-1,2-DICHLOROETHENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
CIS-1,3-DICHLOROPROPENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
DIBROMOMETHANE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
DICHLORODIFLUOROMETHANE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
ETHYL METHACRYLATE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
ETHYLBENZENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
ISOBUTANOL	0.0412 UR	0.0439 UR	0.05 UR	0.0412 UR	0.0387 UR	0.0523 UR	0.0446 UR	0.0439 UR	0.0462 UR	2.13 UJ	1.97 UJ	2.08 UJ	2.18 UJ
METHACRYLONITRILE	0.0257 U	0.0274 U	0.0312 U	0.0257 U	0.0242 U	0.0327 U	0.0279 U	0.0274 U	0.0289 U	1.33 UJ	1.23 UJ	1.3 UJ	1.36 UJ
METHYL IODIDE	0.0103 U	0.011 U	0.0125 U	0.0103 U	0.00967 U	0.0131 U	0.0111 U	0.011 U	0.0116 U	0.532 UJ	0.491 UJ	0.52 UJ	0.546 UJ
METHYL METHACRYLATE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
METHYLENE CHLORIDE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
PROPIONITRILE	0.0257 UR	0.0274 UR	0.0312 UR	0.0257 UR	0.0242 UR	0.0327 UR	0.0279 UR	0.0274 UR	0.0289 UR	1.33 UR	1.23 UR	1.3 UR	1.36 UR
STYRENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
TETRACHLOROETHENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
TOLUENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
TOTAL XYLENES	0.00772 U	0.00823 U	0.00937 U	0.00772 U	0.00725 U	0.00982 U	0.00836 U	0.00823 U	0.00867 U	0.399 UJ	0.369 UJ	0.39 UJ	0.409 UJ
TRANS-1,2-DICHLOROETHENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
TRANS-1,3-DICHLOROPROPENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
TRANS-1,4-DICHLORO-2-BUTENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.004 J	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
TRICHLOROETHENE	0.00257 U	0.00274 U	0.00312 U	0.00257 U	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ
TRICHLOROFLUOROMETHANE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
VINYL ACETATE	0.00514 U	0.00549 U	0.00625 U	0.00515 U	0.00483 U	0.00654 U	0.00557 U	0.00549 U	0.00578 U	0.266 UJ	0.246 UJ	0.26 UJ	0.273 UJ
VINYL CHLORIDE	0.00257 UJ	0.00274 UJ	0.00312 UJ	0.00257 UJ	0.00242 U	0.00327 U	0.00279 U	0.00274 U	0.00289 U	0.133 UJ	0.123 UJ	0.13 UJ	0.136 UJ



**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

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Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB026		23SB027		23SB028		23SB029		23SB030		23SB031		23SB032	
	23SB026-0406	23SB026-0608	23SB027-0002	23SB027-0204	23SB028-0002	23SB028-0204	23SB029-0002	23SB029-0204	23SB030-0002	23SB030-0002-D	23SB030-0204	23SB031-0002	23SB032-0002	23SB032-0204
	20121007	20121007	20130518	20130518	20130518	20130518	20130518	20130518	20130519	20130519	20130519	20130519	20130519	20130519
	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL
	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
	SB	SB	SS	SB	SS	SB	SS	SB	SS	SS	SB	SS	SS	SB
	4	6	0	2	0	2	0	2	0	0	2	0	0	2
	6	8	2	4	2	4	2	4	2	2	3	1.5	2	3
MISCELLANEOUS PARAMETERS (F)														
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/														
SULFATE	21.2 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)														
PH	7.89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (UG/I														
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES														
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)														
AROCLOR-1016	0.00189 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	0.00189 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	0.00189 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	0.00189 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	0.00189 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	0.00189 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	0.00189 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)														
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K														
DRO (C08-C28)	8.06 U	7.29 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DRO (C08-C34)	10.6 J	11.1 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	4.77 U	5.03 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARB														
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.0444	0.00477 J	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
ACENAPHTHENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
ACENAPHTHYLENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
ANTHRACENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
BAP EQUIVALENT-HALFND	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0819824	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
BAP EQUIVALENT-POS	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.00714	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
BENZO(A)ANTHRACENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
BENZO(A)PYRENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
BENZO(B)FLUORANTHENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0714 J	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
BENZO(G,H,I)PERYLENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
BENZO(K)FLUORANTHENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U
CHRYSENE	0.00393 U	0.00374 U	0.0187 U	0.00384 U	0.0677 U	0.00418 U	0.0188 U	0.00395 U	0.00407 U	0.00386 U	0.00379 U	0.00389 U	0.0038 U	0.0039 U



**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

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**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB043 23SS043-0002 20140328 NORMAL SO NORMAL SS 0 2	23SB044 23SS044-0002 20140328 NORMAL SO NORMAL SS 0 2	23SB045 23SS045-0002 20140328 ORIG SO NORMAL SS 0 2	23SB046 23SS046-0002 20140328 DUP SO NORMAL SS 0 2	23SB047 23SS047-0002 20140328 NORMAL SO NORMAL SS 0 2	23SB048 23SS0480002 20140326 NORMAL SO NORMAL SS 0 2	23SB049 23SS049-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB050 23SS050-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB053 23SS053-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB054 23SS054-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB055 23SS055-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB056 23SS056-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB058 23SS058-0002 20140321 NORMAL SO NORMAL SS 0 2	
DIOXINS/FURANS (UG/KG)														
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,4,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,6,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,7,8,9-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,7,8,9-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,7,8-PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1,2,3,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,3,4,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,3,4,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TEQ WHO-2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TEQ WHO-2007 - HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TOTAL TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HERBICIDES (UG/KG)														
2,4,5-T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
METALS (MG/KG)														
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
LEAD	1000	700	27	24	140	61	40	21	63	NA	NA	NA	NA	
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
METALS (UG/KG)														
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
LITHIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MISCELLANEOUS PARAMETERS (%)														
ACTINOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
AMOSITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ANTHOPHYLLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ASBESTOS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CHRYSOTILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CROCIDOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TREMOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB043	23SB044	23SB045		23SB046	23SB047	23SB048	23SB049	23SB050	23SB053	23SB054	23SB055	23SB056	23SB058
SAMPLE ID	23SS043-0002	23SS044-0002	23SS045-0002	23SS045-0002-D	23SS046-0002	23SS047-0002	23SS0480002	23SS049-0002	23SS050-0002	23SS053-0002	23SS054-0002	23SS055-0002	23SS056-0002	23SS058-0002
SAMPLE DATE	20140328	20140328	20140328	20140328	20140328	20140328	20140326	20140321	20140321	20140321	20140321	20140321	20140321	20140321
SAMPLE CODE	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2	2	2	2	2	2	2
MISCELLANEOUS PARAMETERS (F)														
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/														
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)														
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (UG/I														
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES														
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)														
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)														
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K														
DRO (C08-C28)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DRO (C08-C34)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARB														
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	0.038 U	0.041 U	0.037 U	0.035 U	0.039 U	0.0042 U	0.043 U	0.0043 U
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	0.038 U	0.041 U	0.037 U	0.035 U	0.039 U	0.0042 U	0.043 U	0.0043 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	0.038 U	0.082 J	0.037 U	0.035 U	0.039 U	0.0042 U	0.043 U	0.0043 U
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	0.038 U	0.041 U	0.037 U	0.035 U	0.039 U	0.0042 U	0.043 U	0.0043 U
ANTHRACENE	NA	NA	NA	NA	NA	NA	0.038 U	0.21	0.037 UJ	0.035 U	0.039 U	0.0042 U	0.043 U	0.0043 U
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	0.087234	0.47911	0.36458	0.133888	0.22332	0.007653	0.22212	0.0051187
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	0.064434	0.47911	0.36458	0.116388	0.20382	0.005343	0.20062	0.0023
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	0.038 U	0.41	0.21 J	0.059 J	0.11	0.0042 J	0.068 J	0.0043 U
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	0.053 J	0.33	0.23	0.088	0.16	0.0042 J	0.16	0.0023 J
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	0.11	0.44	0.44 J	0.17	0.22	0.0067 J	0.23	0.0043 U
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	0.042 J	0.17	0.15	0.091	0.17	0.0042 U	0.23	0.0043 U
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	0.039 J	0.17	0.14 J	0.05 J	0.096	0.0043 J	0.071 J	0.0043 U
CHRYSENE	NA	NA	NA	NA	NA	NA	0.044 J	0.41	0.28 J	0.088	0.16	0.01	0.11	0.0043 U











**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION	23SB059	23SB062		23SB063			23SB064		23SB065		23SB066	
SAMPLE ID	23SS059-0002	23SS062-0002	23SS0630002	23SB0630204	23SB0630406	23SS064-0002	23SB064-0204	23SB064-0406	23SS065-0002	23SS066-0002	23SB066-0204	23SB066-0406
SAMPLE DATE	20140321	20140321	20140326	20140326	20140326	20140321	20140321	20140321	20140321	20140321	20140321	20140321
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SB	SB	SS	SB	SB	SS	SS	SB	SB
TOP DEPTH	0	0	0	2	4	0	2	4	0	0	2	4
BOTTOM DEPTH	2	2	2	4	6	2	4	6	2	2	4	6
DIOXINS/FURANS (UG/KG)												
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007 - HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HERBICIDES (UG/KG)												
2,4,5-T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)												
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/KG)												
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LITHIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)												
ACTINOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMOSITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHOPHYLLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ASBESTOS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSOTILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CROCIDOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TREMOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB059	23SB062		23SB063			23SB064		23SB065		23SB066	
SAMPLE ID	23SS059-0002	23SS062-0002	23SS0630002	23SB0630204	23SB0630406	23SS064-0002	23SB064-0204	23SB064-0406	23SS065-0002	23SS066-0002	23SB066-0204	23SB066-0406
SAMPLE DATE	20140321	20140321	20140326	20140326	20140326	20140321	20140321	20140321	20140321	20140321	20140321	20140321
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SB	SB	SS	SB	SB	SS	SS	SB	SB
TOP DEPTH	0	0	0	2	4	0	2	4	0	0	2	4
BOTTOM DEPTH	2	2	2	4	6	2	4	6	2	2	4	6
MISCELLANEOUS PARAMETERS (F)												
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/												
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)												
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (UG/												
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES												
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEPP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)												
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)												
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DJELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K												
DRO (C08-C28)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DRO (C08-C34)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARB												
1-METHYLNAPHTHALENE	0.039 U	0.037 U	0.039 U	0.041 U	0.042 U	0.04 U	0.038 UJ	0.039 UJ	0.21	0.041 U	0.042 UJ	0.0041 UJ
2-METHYLNAPHTHALENE	0.039 U	0.037 U	0.039 U	0.041 U	0.042 U	0.04 U	0.038 UJ	0.039 UJ	0.4	0.041 U	0.042 UJ	0.0041 J
ACENAPHTHENE	0.039 U	0.037 U	0.039 U	0.041 U	0.042 U	0.04 U	0.038 UJ	0.039 UJ	1.5	0.041 U	0.042 UJ	0.0041 UJ
ACENAPHTHYLENE	0.039 U	0.037 U	0.039 U	0.041 U	0.042 U	0.04 U	0.038 UJ	0.039 UJ	0.15	0.041 U	0.042 UJ	0.0041 UJ
ANTHRACENE	0.043 J	0.037 U	0.039 U	0.041 U	0.042 U	0.041 J	0.038 UJ	0.039 UJ	3.3	0.041 U	0.042 UJ	0.0041 UJ
BAP EQUIVALENT-HALFND	0.2573	0.21344	0.49245	0.15956	0.053731	0.19484	0.17868	0.0475645	6.794	0.12557	0.063931	0.0105773
BAP EQUIVALENT-POS	0.2378	0.21344	0.49245	0.13906	0.0283	0.17484	0.15968	0.022	6.794	0.10302	0.0385	0.0085068
BENZO(A)ANTHRACENE	0.12	0.045 J	0.28	0.081 J	0.042 U	0.07 J	0.093 J	0.039 UJ	5.7	0.065 J	0.042 UJ	0.0046 J
BENZO(A)PYRENE	0.18	0.09	0.34	0.11	0.024 J	0.14	0.12 J	0.022 J	5	0.083 J	0.033 J	0.0062 J
BENZO(B)FLUORANTHENE	0.35	0.17	0.56	0.16	0.043 J	0.21	0.21 J	0.039 UJ	8.4	0.13	0.055 J	0.01 J
BENZO(G,H,I)PERYLENE	0.16	0.15	0.22	0.076 J	0.042 U	0.091	0.1 J	0.039 UJ	2.3	0.045 J	0.042 UJ	0.012 J
BENZO(K)FLUORANTHENE	0.13	0.057 J	0.21	0.066 J	0.042 U	0.13	0.078 J	0.039 UJ	2.8	0.042 J	0.042 UJ	0.0041 UJ
CHRYSENE	0.2	0.07 J	0.35	0.1	0.042 U	0.14	0.1 J	0.039 UJ	6	0.1	0.042 UJ	0.0068 J

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB059 23SS059-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB062 23SS062-0002 20140321 NORMAL SO NORMAL SS 0 2	23SS0630002 20140326 NORMAL SO NORMAL SS 0 2	23SB063 23SB0630204 20140326 NORMAL SO NORMAL SB 2 4	23SB0630406 20140326 NORMAL SO NORMAL SB 4 6	23SS064-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB064-0204 20140321 NORMAL SO NORMAL SB 2 4	23SB064-0406 20140321 NORMAL SO NORMAL SB 4 6	23SB065 23SS065-0002 20140321 NORMAL SO NORMAL SS 0 2	23SS066-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB066 23SB066-0204 20140321 NORMAL SO NORMAL SB 2 4	23SB066-0406 20140321 NORMAL SO NORMAL SB 4 6
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL METHANE SULFONATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOBUTANOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISODRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOSAFROLE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHAPYRILENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL METHANE SULFONATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIMETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-BUTYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOMETHYLETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOMORPHOLINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOPIPERIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOPYRROLIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O,O,O-TRIETHYL PHOSPHOROTHIOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-TOLUIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-DIMETHYLAMINOAZOBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENACETIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAFROLE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THIONAZIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP HERBICIDES (UG/L)												
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (UG/L)												
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (UG/L)												
PAINT FILTER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
REACTIVE CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
REACTIVE SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP PESTICIDE/PCBS (UG/L)												
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB059 23SS059-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB062 23SS062-0002 20140321 NORMAL SO NORMAL SS 0 2	23SS0630002 20140326 NORMAL SO NORMAL SS 0 2	23SB063 23SB0630204 20140326 NORMAL SO NORMAL SB 2 4	23SB0630406 20140326 NORMAL SO NORMAL SB 4 6	23SS064-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB064 23SB064-0204 20140321 NORMAL SO NORMAL SB 2 4	23SB064-0406 20140321 NORMAL SO NORMAL SB 4 6	23SB065 23SS065-0002 20140321 NORMAL SO NORMAL SS 0 2	23SS066-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB066 23SB066-0204 20140321 NORMAL SO NORMAL SB 2 4	23SB066-0406 20140321 NORMAL SO NORMAL SB 4 6
TCLP VOLATILES (UG/L)												
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (MG/KG)												
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-CHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACETONITRILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACROLEIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACRYLONITRILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROPRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL METHACRYLATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOBUTANOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHACRYLONITRILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL IODIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL METHACRYLATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PROPIONITRILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,4-DICHLORO-2-BUTENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA



**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION	23SS067-0002	23SB067	23SS067-0204	23SS068-0002	23SB068	23SB068-0406	23SS0690002	23SB069	23SB0690406	23SS0700002	23SB070	23SB0700406
SAMPLE ID	20140321	20140321	20140321	20140321	20140321	20140321	20140326	20140326	20140326	20140326	20140326	20140326
SAMPLE DATE	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SS	SB	SB	SS	SB	SB	SS	SB	SB
TOP DEPTH	0	0	2	0	2	4	0	2	4	0	2	4
BOTTOM DEPTH	2	2	4	2	4	6	2	4	6	2	4	6
DIOXINS/FURANS (UG/KG)												
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007 - HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HERBICIDES (UG/KG)												
2,4,5-T	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)												
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/KG)												
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LITHIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)												
ACTINOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMOSITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHOPHYLLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ASBESTOS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSTOTILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CROCIDOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TREMOLITE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION												
SAMPLE ID	23SS067-0002	23SB067	23SS067-0204	23SS068-0002	23SB068	23SB068-0406	23SS0690002	23SB069	23SB0690406	23SS0700002	23SB070	23SB0700406
SAMPLE DATE	20140321	20140321	20140321	20140321	20140321	20140321	20140326	20140326	20140326	20140326	20140326	20140326
SAMPLE CODE	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SS	SB	SB	SS	SB	SB	SS	SB	SB
TOP DEPTH	0	0	2	0	2	4	0	2	4	0	2	4
BOTTOM DEPTH	2	2	4	2	4	6	2	4	6	2	4	6
MISCELLANEOUS PARAMETERS (F)												
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/												
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)												
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (UG/I												
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES												
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEPP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)												
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)												
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K												
DRO (C08-C28)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DRO (C08-C34)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARB												
1-METHYLNAPHTHALENE	0.042 U	0.042 U	0.0043 U	0.36 U	0.07 UJ	0.37 J	0.034 U	0.0038 U	0.0039 U	2.5	0.0039 U	0.0049 U
2-METHYLNAPHTHALENE	0.042 U	0.042 U	0.0043 U	0.43 J	0.073 J	0.5 J	0.034 U	0.0038 U	0.0039 U	6.8	0.0039 U	0.0049 U
ACENAPHTHENE	0.042 U	0.042 U	0.0043 U	3.8	0.39 J	3.6 J	0.034 U	0.0038 U	0.0039 U	0.068 U	0.0039 U	0.0049 U
ACENAPHTHYLENE	0.042 U	0.042 U	0.0043 U	0.74	1 J	0.59 J	0.034 U	0.0038 U	0.0039 U	0.068 U	0.0039 U	0.0049 U
ANTHRACENE	0.042 J	0.042 U	0.0043 U	11	1.3 J	7.6 J	0.034 U	0.0038 U	0.0039 U	0.068 U	0.0039 U	0.0049 U
BAP EQUIVALENT-HALFND	0.52962	0.47362	0.017692	30.884	9.3647	19.078	0.308988	0.0038 U	0.0048709	0.14755	0.0039 U	0.0049 U
BAP EQUIVALENT-POS	0.52962	0.47362	0.015542	30.884	9.3647	19.078	0.308988	0.0038 U	0.0005809	0.10981	0.0039 U	0.0049 U
BENZO(A)ANTHRACENE	0.25	0.16	0.0088	24	5.7 J	17 J	0.061 J	0.0038 U	0.0039 U	0.097	0.0039 U	0.0049 U
BENZO(A)PYRENE	0.37	0.23	0.012	21	5.9 J	12 J	0.19	0.0038 U	0.0039 U	0.088	0.0039 U	0.0049 U
BENZO(B)FLUORANTHENE	0.65	0.39	0.019	31	8.7 J	18 J	0.23	0.0038 U	0.0052 J	0.12 J	0.0039 U	0.0049 U
BENZO(G,H,I)PERYLENE	0.23	0.15	0.011	9.6	4.5 J	7.6 J	0.34	0.0038 U	0.0039 U	0.068 U	0.0039 U	0.0049 U
BENZO(K)FLUORANTHENE	0.22 J	0.11 J	0.0068 J	12	3.9 J	7.2 J	0.079	0.0038 U	0.0051 J	0.068 U	0.0039 U	0.0049 U
CHRYSENE	0.42 J	0.22 J	0.014	24	5.7 J	16 J	0.098	0.0038 U	0.0099	0.11	0.0039 U	0.0049 U

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SS067-0002 20140321 ORIG SO NORMAL SS 0 2	23SB067 23SS067-0002-D 20140321 DUP SO NORMAL SS 0 2	23SS067-0204 20140321 NORMAL SO NORMAL SB 2 4	23SS068-0002 20140321 NORMAL SO NORMAL SS 0 2	23SB068 23SS068-0204 20140321 NORMAL SO NORMAL SB 2 4	23SS068-0406 20140321 NORMAL SO NORMAL SB 4 6	23SS0690002 20140326 NORMAL SO NORMAL SS 0 2	23SB069 23SB0690204 20140326 NORMAL SO NORMAL SB 2 4	23SB0690406 20140326 NORMAL SO NORMAL SB 4 6	23SS0700002 20140326 NORMAL SO NORMAL SS 0 2	23SB070 23SB0700204 20140326 NORMAL SO NORMAL SB 2 4	23SB0700406 20140326 NORMAL SO NORMAL SB 4 6
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL METHANE SULFONATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOBUTANOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISODRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOSAFROLE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHAPYRILENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL METHANE SULFONATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIMETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-BUTYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOMETHYLETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOMORPHOLINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOPIPERIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOPYRROLIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O,O,O-TRIETHYL PHOSPHOROTHIOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-TOLUIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-DIMETHYLAMINOAZOBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENACETIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAFROLE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THIONAZIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP HERBICIDES (UG/L)												
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (UG/L)												
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (UG/L)												
PAINT FILTER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
REACTIVE CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
REACTIVE SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP PESTICIDE/PCBS (UG/L)												
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]



**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]

**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

[illegible]

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION													
SAMPLE ID	23SS0710002	23SB071											
SAMPLE DATE	20140326	20140326											
SAMPLE CODE	NORMAL	NORMAL											
MATRIX	SO	SO											
SAMPLE TYPE	NORMAL	NORMAL											
SUBMATRIX	SS	SB											
TOP DEPTH	0	2											
BOTTOM DEPTH	2	4											
MISCELLANEOUS PARAMETERS (F)													
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/													
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)													
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (UG/I													
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES													
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEPP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)													
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)													
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K													
DRO (C08-C28)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DRO (C08-C34)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARB													
1-METHYLNAPHTHALENE	0.036 U	0.038 U	0.039 U	0.037 U	0.038 U	0.0041 U	0.004 U	0.0038 U	0.039 U	0.039 U	0.0038 U	0.036 U	0.0047 U
2-METHYLNAPHTHALENE	0.036 U	0.038 U	0.047 J	0.037 U	0.038 U	0.0041 U	0.004 U	0.0038 U	0.039 U	0.039 U	0.0038 U	0.036 U	0.0047 U
ACENAPHTHENE	0.036 U	0.038 U	0.039 U	0.037 U	0.038 U	0.0041 U	0.004 U	0.0038 U	0.039 U	0.039 U	0.0038 U	0.036 U	0.0047 U
ACENAPHTHYLENE	0.12	0.038 U	0.039 U	0.037 U	0.038 U	0.0041 U	0.0041 J	0.0077	0.039 U	0.039 U	0.0038 U	0.036 U	0.0047 U
ANTHRACENE	0.2	0.038 U	0.039 U	0.051 J	0.038 U	0.0041 U	0.004 U	0.0038 U	0.039 U	0.039 U	0.0038 U	0.036 J	0.0047 U
BAP EQUIVALENT-HALFND	3.6498	0.14847	0.039 U	0.82039	0.05983	0.0041 U	0.082008	0.113318	0.0425645	0.039 U	0.0038 U	0.17964	0.047913
BAP EQUIVALENT-POS	3.6498	0.12757	0.039 U	0.82039	0.03684	0.0041 U	0.082008	0.113318	0.017	0.039 U	0.0038 U	0.16164	0.047913
BENZO(A)ANTHRACENE	1.9	0.11	0.039 U	0.33	0.038 U	0.0041 U	0.041	0.048	0.039 U	0.039 U	0.0038 U	0.12	0.033
BENZO(A)PYRENE	2.4	0.099	0.039 U	0.54	0.032 J	0.0041 U	0.056	0.079	0.017 J	0.039 U	0.0038 U	0.12	0.031
BENZO(B)FLUORANTHENE	4.4	0.17	0.039 U	0.95	0.048 J	0.0041 U	0.087	0.16	0.039 U	0.039 U	0.0038 U	0.21	0.045
BENZO(G,H,I)PERYLENE	1.4	0.052 J	0.039 U	0.55	0.038 U	0.0041 U	0.046	0.074	0.039 U	0.039 U	0.0038 U	0.088	0.018
BENZO(K)FLUORANTHENE	1.3	0.046 J	0.039 U	0.28	0.038 U	0.0041 U	0.035	0.043	0.039 U	0.039 U	0.0038 U	0.08	0.018
CHRYSENE	2.8	0.11	0.039 U	0.59	0.04 J	0.0041 U	0.058	0.088	0.039 U	0.039 U	0.0038 U	0.14	0.033









**Table B1-1**  
**Soil Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**

	23SS0710002	23SB071	23SB0710406	23SS0720002	23SB072	23SB0720406	23SB073	23SS0740002	23SB074	23SB0740406	23SS0750002	23SB075	23SB0750406
SAMPLE ID	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326
SAMPLE DATE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE CODE	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
MATRIX	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SAMPLE TYPE	SS	SB	SB	SS	SB	SB	SS	SS	SB	SB	SS	SB	SB
SUBMATRIX	0	2	4	0	2	4	0	0	2	4	0	2	4
TOP DEPTH	2	4	6	2	4	6	2	2	4	6	2	4	6
BOTTOM DEPTH	2	4	6	2	4	6	2	2	4	6	2	4	6
VOLATILES (UG/KG)													
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DIOXANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-CHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACETONITRILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACROLEIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROPRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL METHACRYLATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISOBUTANOL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ISODRIN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHACRYLONITRILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL IODIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYL METHACRYLATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLORONITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PROPIONITRILE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,4-DICHLORO-2-BUTENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB076		23SB077	23SB078		23SB079	23SB080	23SB081
	23SS076-0002	23SB076-0203	23SS077-0002	23SS078-0001	23SS078-0001-D	23SS079-0002	23SS080-0002	23SS081-0002
	20140417	20140417	20140417	20140417	20140417	20140417	20140417	20140417
	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
	SO	SO	SO	SO	SO	SO	SO	SO
	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
	SS	SB	SS	SS	SS	SS	SS	SS
	0	2	0	0	0	0	0	0
DIOXINS/FURANS (UG/KG)	2	3	2	1	1	2	2	2
	1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	NA	NA	NA	NA
	1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	NA	NA	NA	NA
	1,2,3,4,6,7,8-HPCDD	NA	NA	NA	NA	NA	NA	NA
	1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	NA
	1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	NA
	1,2,3,4,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA
	1,2,3,4,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PECDD	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007	NA	NA	NA	NA	NA	NA	NA	NA
TEQ WHO-2007 - HALFND	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDD	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HPCDF	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDD	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL HXCDF	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PECDD	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL PECDF	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDD	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL TCDF	NA	NA	NA	NA	NA	NA	NA	NA
HERBICIDES (UG/KG)								
2,4,5-T	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)								
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	59	15	58	29	31	19	12	21
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
METALS (UG/KG)								
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
LITHIUM	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA
TIN	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (%)								
ACTINOLITE	NA	NA	NA	NA	NA	NA	NA	NA
AMOSITE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHOPHYLLITE	NA	NA	NA	NA	NA	NA	NA	NA
ASBESTOS	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSOTILE	NA	NA	NA	NA	NA	NA	NA	NA
CROCIDOLITE	NA	NA	NA	NA	NA	NA	NA	NA
TREMOLITE	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION	23SB076		23SB077	23SB078		23SB079	23SB080	23SB081
SAMPLE ID	23SS076-0002	23SB076-0203	23SS077-0002	23SS078-0001	23SS078-0001-D	23SS079-0002	23SS080-0002	23SS081-0002
SAMPLE DATE	20140417	20140417	20140417	20140417	20140417	20140417	20140417	20140417
SAMPLE CODE	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	2	0	0	0	0	0	0
BOTTOM DEPTH	2	3	2	1	1	2	2	2
MISCELLANEOUS PARAMETERS (F)								
FLASHPOINT	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/								
SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)								
PH	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (UG/I								
CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES								
DIMETHOATE	NA	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	NA	NA	NA	NA	NA	NA	NA	NA
METHYL PARATHION	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA
SULFOTEPP	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)								
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBS (UG/KG)								
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	NA	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
KEPONE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
PHORATE	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (MG/K								
DRO (C08-C28)	NA	NA	NA	NA	NA	NA	NA	NA
DRO (C08-C34)	NA	NA	NA	NA	NA	NA	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARB								
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB076		23SB077	23SB078		23SB079	23SB080	23SB081
	23SS076-0002	23SB076-0203	23SS077-0002	23SS078-0001	23SS078-0001-D	23SS079-0002	23SS080-0002	23SS081-0002
	20140417	20140417	20140417	20140417	20140417	20140417	20140417	20140417
	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
	SO	SO	SO	SO	SO	SO	SO	SO
	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
	SS	SB	SS	SS	SS	SS	SS	SS
	0	2	0	0	0	0	0	0
	2	3	2	1	1	2	2	2
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (UG/KG)								
1,2,4,5-TETRACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-TRINITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,3-DINITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-NAPHTHOQUINONE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-PHENYLENEDIAMINE	NA	NA	NA	NA	NA	NA	NA	NA
1-NAPHTHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6-TETRACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
2-ACETYLAMINOFLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-NAPHTHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-PICOLINE	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-DIMETHYLBENZIDINE	NA	NA	NA	NA	NA	NA	NA	NA
3-CHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLCHOLANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-AMINOBIPHENYL	NA	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
4-NITROQUINOLINE-1-OXIDE	NA	NA	NA	NA	NA	NA	NA	NA
5-NITRO-O-TOLUIDINE	NA	NA	NA	NA	NA	NA	NA	NA
7,12-DIMETHYLBENZ(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
A,A-DIMETHYLPHENETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA
ACETOPHENONE	NA	NA	NA	NA	NA	NA	NA	NA
ACROLEIN	NA	NA	NA	NA	NA	NA	NA	NA
ACRYLONITRILE	NA	NA	NA	NA	NA	NA	NA	NA
ANILINE	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
ARAMITE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	NA	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZILATE	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA
DIALATE	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB076		23SB077	23SB078		23SB079	23SB080	23SB081
	23SS076-0002	23SB076-0203	23SS077-0002	23SS078-0001	23SS078-0001-D	23SS079-0002	23SS080-0002	23SS081-0002
	20140417	20140417	20140417	20140417	20140417	20140417	20140417	20140417
	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
	SO	SO	SO	SO	SO	SO	SO	SO
SUBMATRIX TOP DEPTH BOTTOM DEPTH	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
	SS	SB	SS	SS	SS	SS	SS	SS
	0	2	0	0	0	0	0	0
	2	3	2	1	1	2	2	2
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA	NA
DIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL METHANE SULFONATE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOBUTANOL	NA	NA	NA	NA	NA	NA	NA	NA
ISODRIN	NA	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA	NA
ISOSAFROLE	NA	NA	NA	NA	NA	NA	NA	NA
METHAPYRILENE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL METHANE SULFONATE	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIMETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-BUTYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOMETHYLETHYLAMINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOMORPHOLINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOPIPERIDINE	NA	NA	NA	NA	NA	NA	NA	NA
N-NITROSOPYRROLIDINE	NA	NA	NA	NA	NA	NA	NA	NA
O,O,O-TRIETHYL PHOSPHOROTHIOATE	NA	NA	NA	NA	NA	NA	NA	NA
O-TOLUIDINE	NA	NA	NA	NA	NA	NA	NA	NA
P-DIMETHYLAMINOAZOBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PHENACETIN	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA
PHENOL	NA	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	NA	NA	NA	NA	NA	NA	NA	NA
SAFROLE	NA	NA	NA	NA	NA	NA	NA	NA
THIONAZIN	NA	NA	NA	NA	NA	NA	NA	NA
TCLP HERBICIDES (UG/L)								
2,4,5-TP (SILVEX)	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA
TCLP METALS (UG/L)								
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA
TCLP MISCELLANEOUS (UG/L)								
PAINT FILTER	NA	NA	NA	NA	NA	NA	NA	NA
REACTIVE CYANIDE	NA	NA	NA	NA	NA	NA	NA	NA
REACTIVE SULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
TCLP PESTICIDE/PCBS (UG/L)								
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	NA	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-1  
Soil Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB076		23SB077	23SB078		23SB079	23SB080	23SB081
	23SS076-0002	23SB076-0203	23SS077-0002	23SS078-0001	23SS078-0001-D	23SS079-0002	23SS080-0002	23SS081-0002
	20140417	20140417	20140417	20140417	20140417	20140417	20140417	20140417
	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
	SO	SO	SO	SO	SO	SO	SO	SO
	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
	SS	SB	SS	SS	SS	SS	SS	SS
	0	2	0	0	0	0	0	0
	2	3	2	1	1	2	2	2
TCLP VOLATILES (UG/L)								
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (MG/KG)								
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
3-CHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONITRILE	NA	NA	NA	NA	NA	NA	NA	NA
ACROLEIN	NA	NA	NA	NA	NA	NA	NA	NA
ACRYLONITRILE	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROPRENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL METHACRYLATE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOBUTANOL	NA	NA	NA	NA	NA	NA	NA	NA
METHACRYLONITRILE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL IODIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL METHACRYLATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
PROPIONITRILE	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,4-DICHLORO-2-BUTENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA



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SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SB076		23SB077	23SB078		23SB079	23SB080	23SB081
	23SS076-0002	23SB076-0203	23SS077-0002	23SS078-0001	23SS078-0001-D	23SS079-0002	23SS080-0002	23SS081-0002
	20140417	20140417	20140417	20140417	20140417	20140417	20140417	20140417
	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL
	SO	SO	SO	SO	SO	SO	SO	SO
	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
	SS	SB	SS	SS	SS	SS	SS	SS
	0	2	0	0	0	0	0	0
	2	3	2	1	1	2	2	2
VOLATILES (UG/KG)								
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA
1,4-DIOXANE	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	NA	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA
3-CHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONE	NA	NA	NA	NA	NA	NA	NA	NA
ACETONITRILE	NA	NA	NA	NA	NA	NA	NA	NA
ACROLEIN	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
CHLORODIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROPRENE	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYL METHACRYLATE	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
ISOBUTANOL	NA	NA	NA	NA	NA	NA	NA	NA
ISODRIN	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
METHACRYLONITRILE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL IODIDE	NA	NA	NA	NA	NA	NA	NA	NA
METHYL METHACRYLATE	NA	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
PENTACHLORONITROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA
PROPIONITRILE	NA	NA	NA	NA	NA	NA	NA	NA
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,4-DICHLORO-2-BUTENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA

Table B1-2  
Sediment Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana  
Page 1 of 3

LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006	23SW/SD008	23SW/SD009	
	23SD001-0006	23SD001-0006-D	23SD002-0006	23SD003-0006	23SD004-0006	23SD005-0006	23SD006-0006	23SD008-0006	23SD009-0006	23SD009-0006-D
	20121008	20121008	20121008	20121008	20121008	20121008	20121008	20121008	20130519	20130519
	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP
	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
	0	0	0	0	0	0	0	0	0	0
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
METALS (MG/KG)										
ANTIMONY	4.42 U	4.01 U	2.58 U	2.74 U	2.52 U	2.66 U	2.59 U	12.4	2.34 UJ	1.13 UJ
ARSENIC	9.84	8.68	7.16	12.3	12.2	4.59	8.22	8.24	5.88	5.2
BARIUM	219	151	79.8	108	112	20.9	25.3	2290	27.3	39.6
BERYLLIUM	0.766 J	0.659 J	0.7 J	1.32 J	1.48 J	0.526 J	0.672 J	1.27 U	0.46	0.543 J
CADMIUM	0.76 J	0.963 J	0.478 J	0.684 U	0.629 U	0.665 U	0.648 U	29.7	0.586 U	0.282 U
CHROMIUM	22	22.3	20.5	24.2	35.2	9.63	15.2	79.4	13.3 J	11.5 J
COBALT	12.2	10.1	12.7	62	52.4	5.11	4.65	10.4	5.55	4.41 J
COPPER	34.4	35.3	14.1	13.8	17.5	6.1	7.21	553	7.2	8.18
LEAD	52.3	70.3	32.6	28.1	28.4	29.8	9.19	287	28.3 J	32.4 J
MERCURY	0.14	0.134	0.0526	0.0578	0.0385 J	0.0196 J	0.0406 J	0.211	0.0171 J	0.0524
NICKEL	18.3	15.7	17.4	35.7	48.1	19.5	24.5	34.4	25.9	32
SELENIUM	2.76 U	2.51 U	1.61 U	1.71 U	1.57 U	1.66 U	1.62 U	3.18 U	1.46 U	0.706 U
SILVER	1.1 U	1 U	0.959 J	0.684 U	0.629 U	0.665 U	0.648 U	9.08	0.586 U	0.282 U
THALLIUM	2.21 U	2.01 U	1.29 U	1.37 U	1.26 U	1.33 U	1.3 U	2.54 U	1.17 UJ	0.565 UJ
VANADIUM	35.2	30	19.8	26.1	33.9	9.1	17.8	15	15.6	11.1
ZINC	207	217	67.2	80	103	42.1	47.6	1940	53.8	54.9
MISCELLANEOUS PARAMETERS (MG/										
TOTAL ORGANIC CARBON	46200	60000	26300	24200	9830	4710	15900	89300	NA	NA
PCBS (MG/KG)										
AROCLOR-1016	0.00341 UJ	0.00334 UJ	0.00208 UJ	0.00209 UJ	0.00203 UJ	0.00213 UJ	0.00217 UJ	0.00386 UJ	NA	NA
AROCLOR-1221	0.00341 UJ	0.00334 UJ	0.00208 UJ	0.00209 UJ	0.00203 UJ	0.00213 UJ	0.00217 UJ	0.00386 UJ	NA	NA
AROCLOR-1232	0.00341 UJ	0.00334 UJ	0.00208 UJ	0.00209 UJ	0.00203 UJ	0.00213 UJ	0.00217 UJ	0.00386 UJ	NA	NA
AROCLOR-1242	0.00341 UJ	0.00334 UJ	0.00208 UJ	0.00209 UJ	0.00203 UJ	0.00213 UJ	0.00217 UJ	0.00386 UJ	NA	NA
AROCLOR-1248	0.00341 UJ	0.00334 UJ	0.00208 UJ	0.00209 UJ	0.00203 UJ	0.00213 UJ	0.00217 UJ	0.00386 UJ	NA	NA
AROCLOR-1254	0.00341 UJ	0.00334 UJ	0.00208 UJ	0.00209 UJ	0.00203 UJ	0.00298 J	0.00217 UJ	0.00974 J	NA	NA
AROCLOR-1260	0.0105 J	0.00702 J	0.0108 J	0.0063 J	0.00264 J	0.00224 J	0.00217 UJ	0.00386 UJ	NA	NA
PETROLEUM HYDROCARBONS (MG/K										
DRO (C08-C28)	NA	NA	NA	NA	NA	NA	NA	48600 U	NA	NA
DRO (C08-C34)	NA	NA	NA	NA	NA	NA	NA	48600 U	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA	NA	NA	NA	NA	504	NA	NA
POLYCYCLIC AROMATIC HYDROCARB										
2-METHYLNAPHTHALENE	0.0347 U	0.0342 U	0.0217 U	0.00424 U	0.00834	0.0216 U	0.00418 U	26.5	0.0187 U	0.0223 U
ACENAPHTHENE	0.0347 U	0.0342 U	0.0217 U	0.00424 U	0.00392 U	0.0216 U	0.00418 U	1.54	0.0187 U	0.0223 U
ACENAPHTHYLENE	0.0347 U	0.0342 U	0.0217 U	0.00424 U	0.00392 U	0.0216 U	0.00685 J	0.0392 U	0.0187 U	0.0223 U
ANTHRACENE	0.0347 U	0.0342 U	0.0217 U	0.00424 U	0.00392 U	0.0216 U	0.00418 U	0.0392 U	0.0187 U	0.0223 U
BENZO(A)ANTHRACENE	0.0347 U	0.0587 J	0.0217 U	0.00424 U	0.00392 U	0.0216 U	0.00418 U	0.61	0.0187 U	0.0387 J
BENZO(A)PYRENE	0.0734	0.101	0.0303 J	0.00604 J	0.00889	0.0216 U	0.255	0.0392 U	0.0187 U	0.0434 J
BENZO(B)FLUORANTHENE	0.114	0.092	0.0399 J	0.00583 J	0.00846	0.0226 J	0.254	0.0392 U	0.0187 U	0.0537
BENZO(G,H,I)PERYLENE	0.0858	0.0342 U	0.036 J	0.00424 U	0.00998	0.0216 U	0.185	0.0392 U	0.0187 U	0.0361 J
BENZO(K)FLUORANTHENE	0.082	0.125	0.0217 U	0.00493 J	0.00476 J	0.0216 U	0.141	0.0392 U	0.0187 U	0.0359 J
CHRYSENE	0.0989	0.103	0.0297 J	0.00424 U	0.00854	0.0216 U	0.00418 U	0.962	0.0187 U	0.0545
DIBENZO(A,H)ANTHRACENE	0.0347 U	0.0342 U	0.0217 U	0.00424 U	0.00392 U	0.0216 U	0.0884	0.0392 U	0.0187 U	0.0223 U
FLUORANTHENE	0.101	0.103	0.04 J	0.0119	0.00901	0.0231 J	0.0084	1.5	0.0187 U	0.0405 J
FLUORENE	0.0347 U	0.0342 U	0.0217 U	0.00424 U	0.00392 U	0.0216 U	0.00418 U	0.0392 U	0.0187 U	0.0223 U
INDENO(1,2,3-CD)PYRENE	0.0634 J	0.0791	0.0257 J	0.00492 J	0.00526 J	0.0216 U	0.164	0.23	0.0187 U	0.0351 J
NAPHTHALENE	0.0347 U	0.0342 U	0.0217 U	0.00424 U	0.00392 U	0.0216 U	0.00418 U	12.2	0.0187 U	0.0223 U
PHENANTHRENE	0.0347 U	0.0342 U	0.0217 U	0.00424 U	0.012	0.0216 U	0.00418 U	4.24	0.0187 U	0.0223 U
PYRENE	0.0929	0.11	0.0397 J	0.00948	0.0157	0.0234 J	0.0628	2.56	0.0187 U	0.0435 J
VOLATILES (MG/KG)										
1,1,1,2-TETRACHLOROETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	NA	NA
1,1,1-TRICHLOROETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
1,1,2,2-TETRACHLOROETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
1,1,2-TRICHLOROETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
1,1,2-TRICHLOROTRIFLUOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	0.00391 U	0.00439 U

**Table B1-2**  
**Sediment Sample Analytical Data**  
**SWMU 23 - Battery Shop Building 36**  
**NSA Crane, Crane, Indiana**  
**Page 2 of 3**

LOCATION	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006	23SW/SD008	23SW/SD009	
SAMPLE ID	23SD001-0006	23SD001-0006-D	23SD002-0006	23SD003-0006	23SD004-0006	23SD005-0006	23SD006-0006	23SD008-0006	23SD009-0006	23SD009-0006-D
SAMPLE DATE	20121008	20121008	20121008	20121008	20121008	20121008	20121008	20121008	20130519	20130519
SAMPLE CODE	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP
MATRIX	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
TOP DEPTH	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1,1-DICHLOROETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
1,1-DICHLOROETHENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
1,2,3-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 UJ	0.0022 U
1,2,3-TRICHLOROPROPANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	NA	NA
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 UJ	0.0022 U
1,2-DIBROMO-3-CHLOROPROPANE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 U
1,2-DIBROMOETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
1,2-DICHLOROETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 UJ
1,2-DICHLOROPROPANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
2-BUTANONE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 UJ
2-HEXANONE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 U
3-CHLOROPROPENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	NA	NA
4-METHYL-2-PENTANONE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 UJ
ACETONE	1.1 UJ	1.07 UJ	0.591 UJ	0.521 UJ	0.528 UJ	0.542 UJ	0.557 UJ	1.72 UJ	0.00782 U	0.00879 U
ACETONITRILE	2.76 UR	2.68 UR	1.48 UR	1.3 UR	1.32 UR	1.36 UR	1.39 UR	4.3 UR	NA	NA
ACROLEIN	1.1 UR	1.07 UR	0.591 UR	0.521 UR	0.528 UR	0.542 UR	0.557 UR	1.72 UR	NA	NA
ACRYLONITRILE	1.1 UJ	1.07 UJ	0.591 UJ	0.521 UJ	0.528 UJ	0.542 UJ	0.557 UJ	1.72 UJ	NA	NA
BENZENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
BROMOCHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
BROMODICHLOROMETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
BROMOFORM	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
BROMOMETHANE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 U
CARBON DISULFIDE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
CARBON TETRACHLORIDE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
CHLOROBENZENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
CHLORODIBROMOMETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
CHLOROETHANE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 U
CHLOROFORM	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
CHLOROMETHANE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 U
CHLOROPRENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	NA	NA
CIS-1,2-DICHLOROETHENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
CIS-1,3-DICHLOROPROPENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
DIBROMOMETHANE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	NA	NA
DICHLORODIFLUOROMETHANE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 UJ	0.00439 U
ETHYL METHACRYLATE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	NA	NA
ETHYLBENZENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	4.76 J	0.00196 U	0.0022 U
ISOBUTANOL	4.41 UJ	4.29 UJ	2.36 UJ	2.08 UJ	2.11 UJ	2.17 UJ	2.23 UJ	6.88 UJ	NA	NA
ISOPROPYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	0.00391 U	0.00439 U
METHACRYLONITRILE	2.76 UJ	2.68 UJ	1.48 UJ	1.3 UJ	1.32 UJ	1.36 UJ	1.39 UJ	4.3 UJ	NA	NA
METHYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	0.00391 UJ	0.00439 UJ
METHYL CYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
METHYL IODIDE	1.1 UJ	1.07 UJ	0.591 UJ	0.521 UJ	0.528 UJ	0.542 UJ	0.557 UJ	1.72 UJ	NA	NA
METHYL METHACRYLATE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	NA	NA
METHYL TERT-BUTYL ETHER	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
METHYLENE CHLORIDE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 U
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	0.00196 U	0.0022 U
PROPIONITRILE	2.76 UR	2.68 UR	1.48 UR	1.3 UR	1.32 UR	1.36 UR	1.39 UR	4.3 UR	NA	NA
STYRENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
TETRACHLOROETHENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 UJ	0.0022 U
TOLUENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	2.64 J	0.00196 U	0.0022 U

Table B1-2  
Sediment Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana  
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LOCATION SAMPLE ID SAMPLE DATE SAMPLE CODE MATRIX SAMPLE TYPE SUBMATRIX TOP DEPTH BOTTOM DEPTH	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006	23SW/SD008	23SW/SD009	
	23SD001-0006	23SD001-0006-D	23SD002-0006	23SD003-0006	23SD004-0006	23SD005-0006	23SD006-0006	23SD008-0006	23SD009-0006	23SD009-0006-D
	20121008	20121008	20121008	20121008	20121008	20121008	20121008	20121008	20130519	20130519
	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP
	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
	0	0	0	0	0	0	0	0	0	0
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TOTAL XYLENES	0.828 UJ	0.804 UJ	0.443 UJ	0.39 UJ	0.396 UJ	0.407 UJ	0.418 UJ	30.5 J	0.00587 U	0.00659 U
TRANS-1,2-DICHLOROETHENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
TRANS-1,3-DICHLOROPROPENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U
TRANS-1,4-DICHLORO-2-BUTENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	NA	NA
TRICHLOROETHENE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00124 J	0.0012 J
TRICHLOROFLUOROMETHANE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	0.00391 U	0.00439 U
VINYL ACETATE	0.552 UJ	0.536 UJ	0.295 UJ	0.26 UJ	0.264 UJ	0.271 UJ	0.279 UJ	0.861 UJ	NA	NA
VINYL CHLORIDE	0.276 UJ	0.268 UJ	0.148 UJ	0.13 UJ	0.132 UJ	0.136 UJ	0.139 UJ	0.43 UJ	0.00196 U	0.0022 U

Table B1-3  
Surface Water Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana  
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LOCATION	23/00-012	23/00-014	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006
SAMPLE ID	23/00-012	23/00-014	23SW001	23SW001-D	23SW002	23SW003	23SW004	23SW005	23SW006
SAMPLE DATE	19960222	19960222	20121008	20121008	20121008	20121008	20121008	20121008	20121008
SAMPLE CODE	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SW	SW	SW	SW	SW	SW	SW	SW	SW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	SW	SW	SW	SW	SW	SW	SW
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
DISSOLVED METALS (UG/L)									
ANTIMONY	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U
ARSENIC	NA	NA	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
BARIUM	NA	NA	73	72.5	54.4	47.8	47.4	42	38.9
BERYLLIUM	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CADMIUM	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHROMIUM	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U
COBALT	NA	NA	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
COPPER	NA	NA	1.42 J	1.32 J	1.6 J	2 U	2.46 J	2 U	2 U
LEAD	NA	NA	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MERCURY	NA	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
NICKEL	NA	NA	0.907 J	0.772 J	1.06 J	0.959 J	3.92	4.25	12.2
SELENIUM	NA	NA	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U
SILVER	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
THALLIUM	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VANADIUM	NA	NA	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ZINC	NA	NA	1.82 J	1.52 J	2.5 J	2.5 U	4.75 J	4.62 J	14
METALS (UG/L)									
ANTIMONY	1.8 U	1.8 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
ARSENIC	3 U	3 U	2.16 J	1.52 J	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
BARIUM	45.3 B	87.1 B	144	121	56.4	47.8	47.9	43.9	39
BERYLLIUM	0.32 B	4.3 B	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CADMIUM	0.2 U	0.36 B	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHROMIUM	1.9 B	6.3 B	3.21 J	2.12 J	1 UJ	0.56 J	0.681 J	1 UJ	1 UJ
COBALT	0.64 U	3.4	3.44	2.59 J	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
COPPER	3.1 B	13.9 B	10.7	8.97	1.79 J	1.31 J	1.26 J	2 U	2 U
LEAD	2.4 B	10.1	16.3	13.9	0.75 U	0.75 U	0.685 J	0.814	0.75 U
MERCURY	0.2 U	0.2 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
NICKEL	37.5 B	316	4.26	2.86	1.25 J	1.08 J	2.59	4.9	12.8
SELENIUM	2.6 U	2.6 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U
SILVER	0.7 U	0.7 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
THALLIUM	3.5 U	3.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TIN	4.2 U	4.2 U	NA	NA	NA	NA	NA	NA	NA
VANADIUM	0.9 B	5.9	7.29 J	5.81 J	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
ZINC	27.7	272	62.6 J	44.5 J	1.93 J	1.31 J	2.87 J	6.37 J	13.3 J
MISCELLANEOUS PARAMETERS (MG/L)									
HARDNESS AS CaCO3	NA	NA	228	222	193	162	226	321	295
MISCELLANEOUS PARAMETERS (UG/L)									
CYANIDE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
SULFIDE	2.5 U	2500 U	NA	NA	NA	NA	NA	NA	NA
ORGANOPHOSPHOROUS PESTICIDES (UG/L)									
DIMETHOATE	0.5 U	0.77	NA	NA	NA	NA	NA	NA	NA
DISULFOTON	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
FAMPHUR	0.5 U	1 PB	NA	NA	NA	NA	NA	NA	NA
SULFOTEPP	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA

Table B1-3  
Surface Water Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana  
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LOCATION	23/00-012	23/00-014	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006
SAMPLE ID	23/00-012	23/00-014	23SW001	23SW001-D	23SW002	23SW003	23SW004	23SW005	23SW006
SAMPLE DATE	19960222	19960222	20121008	20121008	20121008	20121008	20121008	20121008	20121008
SAMPLE CODE	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SW	SW	SW	SW	SW	SW	SW	SW	SW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	SW	SW	SW	SW	SW	SW	SW
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
PESTICIDES/PCBS (UG/L)									
1,1-DICHLOROETHENE	0.1 U	0.1 U	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	0.1 U	0.0008 BJP	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.1 U	0.1 U	NA	NA	NA	NA	NA	NA	NA
ALDRIN	0.03 U	0.03 U	NA	NA	NA	NA	NA	NA	NA
ALPHA-BHC	0.03 U	0.03 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	0.03 U	0.03 U	NA	NA	NA	NA	NA	NA	NA
CHLORDANE	0.12 U	0.12 U	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	0.03 U	0.0014 J	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	0.03 U	0.0018 JP	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	0.0003 JP	0.0011 JP	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN II	0.1 U	0.1 U	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	0.0062 JP	0.05 U	NA	NA	NA	NA	NA	NA	NA
ENDRIN	0.05 U	0.05 U	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	0.03 U	0.03 U	NA	NA	NA	NA	NA	NA	NA
GAMMA-BHC (LINDANE)	0.03 U	0.03 U	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	0.0012 JP	0.03 U	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	0.0017 JP	0.0019 JP	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	0.3 U	0.0097 JP	NA	NA	NA	NA	NA	NA	NA
PHORATE	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	1 U	1 U	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)									
2-METHYLNAPHTHALENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
ACENAPHTHENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
ACENAPHTHYLENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
ANTHRACENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
BENZO(A)ANTHRACENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
BENZO(A)PYRENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
BENZO(B)FLUORANTHENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
BENZO(G,H,I)PERYLENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
BENZO(K)FLUORANTHENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
CHRYSENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
DIBENZO(A,H)ANTHRACENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
FLUORANTHENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
FLUORENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
INDENO(1,2,3-CD)PYRENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
NAPHTHALENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
PHENANTHRENE	NA	NA	1 U	1 U	0.2 U	0.2 U	0.2 U	0.192 U	0.2 U



Table B1-3  
Surface Water Sample Analytical Data  
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LOCATION	23/00-012	23/00-014	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006
SAMPLE ID	23/00-012	23/00-014	23SW001	23SW001-D	23SW002	23SW003	23SW004	23SW005	23SW006
SAMPLE DATE	19960222	19960222	20121008	20121008	20121008	20121008	20121008	20121008	20121008
SAMPLE CODE	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SW	SW	SW	SW	SW	SW	SW	SW	SW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	SW	SW	SW	SW	SW	SW	SW
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
PYRENE	NA	NA	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.0962 U	0.1 U
SEMIVOLATILES (UG/L)									
1,2,4,5-TETRACHLOROBENZENE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
1,3,5-TRINITROBENZENE	45 U	45 U	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
1,3-DINITROBENZENE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
1,4-NAPHTHOQUINONE	35 U	35 U	NA	NA	NA	NA	NA	NA	NA
1,4-PHENYLENEDIAMINE	80 U	80 U	NA	NA	NA	NA	NA	NA	NA
1-NAPHTHYLAMINE	35 U	35 U	NA	NA	NA	NA	NA	NA	NA
2,3,4,6-TETRACHLOROPHENOL	35 U	35 U	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	25 U	25 U	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	25 U	25 U	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	35 U	35 U	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	75 U	75 U	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROTOLUENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
2,6-DICHLOROPHENOL	25 U	25 U	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
2-NAPHTHYLAMINE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
2-PICOLINE	45 U	45 U	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
3,3'-DIMETHYLBENZIDINE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
3-METHYLPHENOL	35 U	35 U	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	30 U	30 U	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	45 U	45 U	NA	NA	NA	NA	NA	NA	NA
4-AMINOBIPHENYL	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	3 U	3 U	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	35 U	35 U	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	35 U	35 U	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	12 U	12 U	NA	NA	NA	NA	NA	NA	NA
4-NITROQUINOLINE-1-OXIDE	75 U	75 U	NA	NA	NA	NA	NA	NA	NA
5-NITRO-O-TOLUIDINE	30 U	30 U	NA	NA	NA	NA	NA	NA	NA
7,12-DIMETHYLBENZ(A)ANTHRACENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA

Table B1-3  
Surface Water Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana  
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LOCATION	23/00-012	23/00-014	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006
SAMPLE ID	23/00-012	23/00-014	23SW001	23SW001-D	23SW002	23SW003	23SW004	23SW005	23SW006
SAMPLE DATE	19960222	19960222	20121008	20121008	20121008	20121008	20121008	20121008	20121008
SAMPLE CODE	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SW	SW	SW	SW	SW	SW	SW	SW	SW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	SW	SW	SW	SW	SW	SW	SW
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
ACENAPHTHENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
ACETOPHENONE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
ACRYLONITRILE	95 U	300 U	NA	NA	NA	NA	NA	NA	NA
ANILINE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
ARAMITE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	4 U	4 U	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROISOPROPYL)ETHER	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	1 J	25 U	NA	NA	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZILATE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
DIALLATE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
DIPHENYLAMINE	30 U	30 U	NA	NA	NA	NA	NA	NA	NA
ETHYL METHANE SULFONATE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
FLUORENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	25 U	25 U	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROPROPENE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
ISODRIN	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
ISOSAFROLE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
METHAPYRILENE	30 U	30 U	NA	NA	NA	NA	NA	NA	NA
METHYL METHANE SULFONATE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIETHYLAMINE	3 U	3 U	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIMETHYLAMINE	5 U	5 U	NA	NA	NA	NA	NA	NA	NA

Table B1-3  
Surface Water Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana  
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LOCATION	23/00-012	23/00-014	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006
SAMPLE ID	23/00-012	23/00-014	23SW001	23SW001-D	23SW002	23SW003	23SW004	23SW005	23SW006
SAMPLE DATE	19960222	19960222	20121008	20121008	20121008	20121008	20121008	20121008	20121008
SAMPLE CODE	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SW	SW	SW	SW	SW	SW	SW	SW	SW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	SW	SW	SW	SW	SW	SW	SW
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
N-NITROSO-DI-N-BUTYLAMINE	3 U	3 U	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	4 U	4 U	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	30 U	30 U	NA	NA	NA	NA	NA	NA	NA
N-NITROSOMETHYLETHYLAMINE	13 U	13 U	NA	NA	NA	NA	NA	NA	NA
N-NITROSOMORPHOLINE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
N-NITROSOPIPERIDINE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
N-NITROSOPYRROLIDINE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
O,O,O-TRIETHYL PHOSPHOROTHIOATE	110 U	110 U	NA	NA	NA	NA	NA	NA	NA
P-DIMETHYLAMINOAZOBENZENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
PENTACHLORO BENZENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	55 U	55 U	NA	NA	NA	NA	NA	NA	NA
PHENACETIN	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
PHENOL	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
PRONAMIDE	15 U	15 U	NA	NA	NA	NA	NA	NA	NA
PYRENE	10 U	10 U	NA	NA	NA	NA	NA	NA	NA
PYRIDINE	20 U	20 U	NA	NA	NA	NA	NA	NA	NA
SAFROLE	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/L)									
1,1,1,2-TETRACHLOROETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
1,1,1-TRICHLOROETHANE	10 U	8 J	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	10 U	5 J	NA	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	10 U	5 U	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMOETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
1,4-DIOXANE	3700 U	12000 U	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
2-HEXANONE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
3-CHLOROPROPENE	15 U	47 U	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
ACETONE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
ACETONITRILE	60 U	190 U	NA	NA	NA	NA	NA	NA	NA
ACROLEIN	90 U	280 U	NA	NA	NA	NA	NA	NA	NA
BENZENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
CARBON TETRACHLORIDE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
CHLOROBENZENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA

Table B1-3  
Surface Water Sample Analytical Data  
SWMU 23 - Battery Shop Building 36  
NSA Crane, Crane, Indiana  
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LOCATION	23/00-012	23/00-014	23SW/SD001		23SW/SD002	23SW/SD003	23SW/SD004	23SW/SD005	23SW/SD006
SAMPLE ID	23/00-012	23/00-014	23SW001	23SW001-D	23SW002	23SW003	23SW004	23SW005	23SW006
SAMPLE DATE	19960222	19960222	20121008	20121008	20121008	20121008	20121008	20121008	20121008
SAMPLE CODE	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SW	SW	SW	SW	SW	SW	SW	SW	SW
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	SW	SW	SW	SW	SW	SW	SW
TOP DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
BOTTOM DEPTH	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999	-9999
CHLORODIBROMOMETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
CHLOROFORM	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
ISOBUTANOL	2800 U	8800 U	NA	NA	NA	NA	NA	NA	NA
METHACRYLONITRILE	20 U	62 U	NA	NA	NA	NA	NA	NA	NA
METHYL IODIDE	5 U	16 U	NA	NA	NA	NA	NA	NA	NA
METHYL METHACRYLATE	20 U	62 U	NA	NA	NA	NA	NA	NA	NA
METHYLENE CHLORIDE	1 J	8 J	NA	NA	NA	NA	NA	NA	NA
PROPIONITRILE	220 U	690 U	NA	NA	NA	NA	NA	NA	NA
STYRENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	10 U	4 J	NA	NA	NA	NA	NA	NA	NA
TOLUENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
TRANS-1,3-DICHLOROPROPENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
TRANS-1,4-DICHLORO-2-BUTENE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	65	460	NA	NA	NA	NA	NA	NA	NA
TRICHLOROFLUOROMETHANE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
VINYL ACETATE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	10 U	31 U	NA	NA	NA	NA	NA	NA	NA

## **B.2 HUMAN HEALTH AND ECOLOGICAL RISK SUMMARIES**

## **APPENDIX B.2**

### **HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT DISCUSSIONS**

#### **HUMAN HEALTH RISK ASSESSMENT**

During the development of the draft RFI Report, a Human Health Risk Assessment (HHRA) was completed for those samples initially collected under the approved UFP-SAP. The objective of the HHRA is to determine whether detected concentrations of chemicals within the study area pose a significant threat to potential human receptors under current and/or future land use. The potential risks to human receptors were estimated based on the assumption that no actions were taken to control contaminant releases.

Potential receptors under current and future land use are industrial workers, construction workers, and trespassers. Potential receptors under future land use are child and adult recreational users, and hypothetical child and adult residents. Although future land use is likely to be the same as current land use, the potential future receptors were evaluated in the baseline HHRA, primarily for decision-making purposes.

Quantitative estimates of noncarcinogenic and carcinogenic risks (HIs and ILCRs, respectively) were developed for potential human receptors. Cumulative HIs for all receptors under the RME and CTE scenarios were less than or equal to unity (1), indicating that adverse non-carcinogenic effects are not anticipated for these receptors under the defined exposure conditions.

Cumulative ILCRs for all receptors with the exception of hypothetical child and lifelong residents were less than or within USEPA's and IDEM's target risk range of  $10^{-4}$  to  $10^{-6}$ . The ILCRs for hypothetical child and lifelong residents exposed to surface soil exceeded USEPA's and IDEM's target risk range. Carcinogenic PAHs, arsenic, and chromium were the major contributors to the ILCRs for these receptors, and are therefore chemicals of concern (COC). However, chromium speciation was not performed on the soil samples; therefore, chromium was evaluated as hexavalent chromium in this HHRA. If chromium had been evaluated as trivalent chromium then chromium would not be a contributor to the ILCRs for the hypothetical child and lifelong residents.

Cumulative ILCRs for all receptors under the CTE scenario were within USEPA's and IDEM's target risk range.

Lead was identified as a COPC in surface soil at SWMU 23. Hypothetical residential exposures to lead in surface soil were evaluated using USEPA's IEUBK lead model. Risks to construction workers, industrial workers, and adult recreational users exposed to lead in surface soil were evaluated using USEPA's



Adult Lead Model. Results of the analysis conducted for these receptors do not exceed the EPA goal regarding lead exposures [i.e., no more than 5 percent of children (or fetuses of exposed woman) having blood-lead levels exceeding a 10 µg/L blood-lead level].

While the results of the IEUBK and TRW lead models are within USEPA acceptable levels, concentrations of lead in two samples (23SS014-0002: 4,640 mg/kg; and 23SS017-002: 1,920 mg/kg) exceeded the OSWER and IDEM screening level by four times or more. Therefore, lead was retained as a chemical of concern at locations 23SB014 and 23SB017.

Table 2-2 from the draft RFI Report HHRA is presented in this appendix and shows the cancer risks, hazards, critical pathways and chemicals of concern, and recommendations for those samples collected under the approved UFP-SAP.

## **ECOLOGICAL RISK ASSESSMENT**

During the development of the draft RFI Report, an Ecological Risk Assessment (ERA) was completed for those samples initially collected under the approved UFP-SAP. The objective of the ERA is to evaluate the potential for adverse ecological impacts resulting from site-related contamination. This objective was accomplished by identifying COPCs detected at concentrations that exceed screening levels, identifying the locations of these exceedances, and concluding whether or not further investigation and/or remedial action at SWMU 23 is warranted from an ecological perspective.

This ERA consists of Steps 1, 2, and 3a of the eight-step ecological risk evaluation process discussed in USEPA guidance (1997c and 1998) and the Navy Policy for Conducting ERAs (1999). The first two screening steps comprise the SLERA and correspond with Tier 1 of the Navy policy (1999), during which conservative exposure estimates are compared to screening-level and threshold toxicity values. Step 3a is the first step of a baseline ecological risk assessment (BERA) and consists of refining the Tier 1 assumptions following Steps 1 and 2 to further focus the ERA process on the chemicals of greatest concern at a site. Step 3a corresponds with the first part of Tier 2 of the Navy policy (1999). Steps 3b through 7 are conducted if additional evaluations or investigations are necessary. Aspects of Step 8, risk management, are addressed throughout the ERA process, in cooperation with Region 5 regulators.

Many receptors in the terrestrial/aquatic environment at SWMU 23 are typically grouped into general categories such as invertebrates and vegetation. This is a reflection of the nature of the threshold values, effects values, or criteria typically used to characterize risk for such organisms. However, for vertebrate receptors, the selection of representative species is required so that risks to these upper-level species incurred by intake through eating and drinking can be estimated. Food chain models are used to estimate the intake.

Ingestion is the primary route of exposure for most mammals and birds. The selection of species used to represent these receptor groups was based on considerations of their preferred habitat, body size, sensitivity to contaminants, home range, abundance, commercial or sport utilization, legal status, and functional role (e.g., predators). The availability of exposure parameters such as body mass, feeding rate, and drinking rate was also a factor in selecting surrogate species.

This ERA evaluated surface soil, sediment, and surface water. Based on the initial screening of the chemical data, several chemicals were initially selected as COPCs in surface soil, sediment, and surface water because they were detected at concentrations that exceeded conservative screening levels, they had EEQs greater than 1.0 in the conservative food-chain model, or because they did not have screening levels. These chemicals were then further evaluated to refine the list of COPCs, and to better characterize risks to ecological receptors.

Lead was the only metal retained as a COPC for plants. The two samples collected in the debris removal area have lead concentrations many times greater than the plant screening level, so risks to plants in this area cannot be ruled out. Impacts to plants in the other areas are less likely because the concentrations are not much greater than the conservative screening level and/or the areas are well bounded. However, because the portion of the site with maximum lead concentrations is vegetated, there is uncertainty in whether plants are being significantly impacted.

No chemicals were retained as COPCs for risks to soil invertebrates or for risks to sediment invertebrates or aquatic organisms.

No chemicals were retained as COPCs for mammals and birds. Although the EEQs for lead and mercury were greater than 1.0 based on the LOAEL, the high EEQs are being driven by two samples for lead and mercury. The high lead EEQ is being driven by two samples in the debris removal area, but these two samples only represent a very small portion of the 4.3 acre vegetated area. Similarly, the two greatest mercury detections were in samples collected within the gravel-covered portion of the site where there would be minimal ecological exposure. For these reasons, impacts to invertivorous receptors are expected to be minimal.

Table 2-2 from the draft RFI Report ERA is presented in this appendix and shows the cancer risks, hazards, critical pathways and chemicals of concern, and recommendations for those samples collected under the approved UFP-SAP.

TABLE 2-2

## SUMMARY OF RECEPTOR-SPECIFIC HUMAN HEALTH RISKS AND HAZARDS, ECOLOGICAL RISKS, AND RECOMMENDATIONS

SWMU 23  
NSA CRANE  
CRANE, INDIANA  
PAGE 1 OF 3

Receptor Population	Environmental Medium	Overall Carcinogenic Risk (Human)	Overall Hazard Index (Human)	Lead Exposure (Human)	Overall Risk (Ecological)	Critical Pathways and Chemicals of Concern	Recommendations
Construction Workers (future land use)	Surface Soil	4E-06	0.1	Site-wide exposure is acceptable but two significant hot spots exist: 23SB014 and 23SB017	NA	NA	NFA
Industrial Workers (current and future land use)	Surface Soil	2E-05	0.05		NA	NA	NFA
Adolescent Trespasser (current and future land use)	Surface Soil	3E-06	0.008		NA	NA	NFA
Small Child (0 to 6 years) Recreational User (future land use)	Surface Soil	2E-05	0.05		NA	NA	NFA
Adult Recreational User (future land use)	Surface Soil	4E-06	0.006		NA	NA	NFA
Lifelong Recreational User (future land use)	Surface Soil	2E-05	NA		NA	NA	NFA
On-base Residents (Children) (future land use)	Surface Soil	2E-04	0.06		NA	Ingestion of soil (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene), arsenic <sup>(1)</sup> , and chromium <sup>(2)</sup>	Proceed to CMS or Interim Measures
On-base Residents (Adult) (future land use)	Surface Soil	4E-05	0.07		NA	NA	NFA
On-base Residents (Lifelong) (future land use)	Surface Soil	2E-04	NA		NA	Ingestion of soil (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene) arsenic <sup>(1)</sup> , and chromium <sup>(2)</sup>	Proceed to CMS or Interim Measures
Construction Workers (future land use)	Subsurface Soil	4E-07	0.1		NA	NA	NFA
Industrial Workers (current and future land use)	Subsurface Soil	4E-06	0.03		NA	NA	NFA
Adolescent Trespasser (current and future land use)	Subsurface Soil	3E-07	0.004		NA	NA	NFA

TABLE 2-2

## SUMMARY OF RECEPTOR-SPECIFIC HUMAN HEALTH RISKS AND HAZARDS, ECOLOGICAL RISKS, AND RECOMMENDATIONS

SWMU 23  
NSA CRANE  
CRANE, INDIANA  
PAGE 2 OF 3

Receptor Population	Environmental Medium	Overall Carcinogenic Risk (Human)	Overall Hazard Index (Human)	Lead Exposure (Human)	Overall Risk (Ecological)	Critical Pathways and Chemicals of Concern	Recommendations
Small Child (0 to 6 years) Recreational User (future land use)	Subsurface Soil	1E-06	0.02	No unacceptable exposures to lead.	NA	NA	NFA
Adult Recreational User (future land use)	Subsurface Soil	6E-07	0.003		NA	NA	NFA
Lifelong Recreational User (future land use)	Subsurface Soil	2E-06	NA		NA	NA	NFA
On-base Residents (Children) (future land use)	Subsurface Soil	1E-05	0.3		NA	NA	NFA
On-base Residents (Adult) (future land use)	Subsurface Soil	6E-06	0.03		NA	NA	NFA
On-base Residents (Lifelong) (future land use)	Subsurface Soil	2E-05	NA		NA	NA	NFA
Adolescent Trespasser (current and future land use)	Surface Water	1E-06	0.003		NA	NA	NFA
Small Child (0 to 6 years) Recreational User (future land use)	Surface Water	4E-06	0.02		NA	NA	NFA
Adult Recreational User (future land use)	Surface Water	3E-06	0.005		NA	NA	NFA
Lifelong Recreational User (future land use)	Surface Water	7E-06	NA		NA	NA	NFA
On-base Residents (Children) (future land use)	Surface Water	4E-06	0.02		NA	NA	NFA
On-base Residents (Adult) (future land use)	Surface Water	3E-06	0.005		NA	NA	NFA
On-base Residents (Lifelong) (future land use)	Surface Water	7E-06	NA		NA	NA	NFA
Adolescent Trespasser (current and future land use)	Sediment	5E-07	0.01		NA	NA	NFA

TABLE 2-2

## SUMMARY OF RECEPTOR-SPECIFIC HUMAN HEALTH RISKS AND HAZARDS, ECOLOGICAL RISKS, AND RECOMMENDATIONS

SWMU 23  
NSA CRANE  
CRANE, INDIANA  
PAGE 3 OF 3

Receptor Population	Environmental Medium	Overall Carcinogenic Risk (Human)	Overall Hazard Index (Human)	Lead Exposure (Human)	Overall Risk (Ecological)	Critical Pathways and Chemicals of Concern	Recommendations
Small Child (0 to 6 years) Recreational User (future land use)	Sediment	9E-06	0.2		NA	NA	NFA
Adult Recreational User (future land use)	Sediment	3E-07	0.0009		NA	NA	NFA
Lifelong Recreational User (future land use)	Sediment	1E-05	NA		NA	NA	NFA
On-base Residents (Children) (future land use)	Sediment	9E-06	0.2		NA	NA	NFA
On-base Residents (Adult) (future land use)	Sediment	2E-06	0.02		NA	NA	NFA
On-base Residents (Lifelong) (future land use)	Sediment	1E-05	NA		NA	NA	NFA
Terrestrial Plants and Invertebrates	Surface Soil	NA	NA	NA	Unacceptable	Lead was retained as a COPC for plants. Two samples collected in the Former Debris Disposal Area have lead concentrations many times greater than the plant screening level. No chemicals were retained as COPCs for soil invertebrates.	Proceed to CMS or Interim Measures
Mammals and Birds	Surface Soil	NA	NA	NA	Unacceptable	Lead was retained as a COPC for invertivorous birds. Risk to invertivorous birds is driven by two samples in the Former Debris Disposal Area. However, these two samples only represent a very small portion of the 4.3 acre vegetated area. No other chemicals were retained as COPCs for mammals and herbivorous birds.	Proceed to CMS or Interim Measures

NA = Not applicable.

NFA = No further action.

CMS = Corrective Measures Study.

COPC = Chemical of potential concern.

(1) - arsenic is attributed to background soil concentrations

(2) - chromium is expected to exist in the less toxic trivalent state at the site

## **APPENDIX C**

### **SUPPLEMENTAL CONTRACTOR SPECIFICATIONS**



**SUPPLEMENTAL SPECIFICATIONS**  
**INTERIM MEASURES WORK PLAN**  
**SWMU 23 – BATTERY SHOP BUILDING 36**  
**NSA CRANE**  
**CRANE, INDIANA**

Contractor Requirements

The Contractor will be responsible for performing the following work:

1. Attend pre-Interim Measures Work Plan (IMWP) implementation meeting.
2. Submit documentation in accordance with the “Basic Contract” 30 days prior to beginning work to allow the Navy sufficient time to review and comment. The Contractor will then incorporate Navy comments into the documents. These documents include the following:
  - Work Plan
    - Excavation and Handling Plan
      - ✓ Specific steps for how contaminated soil will be removed from each excavation area and eventually placed in trucks/roll-offs for off-site disposal).
      - ✓ Details regarding decontamination requirements/procedures
      - ✓ Lead stabilization procedures (e.g., pad construction details, waste pile management, specifics on treatment including specific amendments, mixing process, process duration, pre- and post-stabilization testing procedures, etc.).
    - Hazardous/Waste Management Plan
    - Environmental Protection Plan
    - Erosion and Sediment Control Plan
    - Stormwater Pollution Prevention Plan
    - Transportation and Disposal Plan
  - Site Specific Health and Safety Plan (SSHSP) and Activity Hazard Analysis
  - Project Quality Control Plan (QCP)
3. Acquire Facility-specific permits, including but not limited to the following:
  - Safety & Building Availability Permit (ESO 8020/11)
  - Digging Permit (NWSCC 11000/3)
  - Hot Work Permit
4. Mobilize required equipment and personnel to excavate the indicated contaminated soil.
5. Construct and maintain the required erosion and sediment control devices for the duration of the project.
6. Construct required support facilities including, but not limited to, dewatering pad, decontamination pad(s), and material storage areas.
7. Excavate, transport, and dispose lead and polycyclic aromatic hydrocarbon (PAH)-contaminated soils.
8. Restore surface soil excavation area to meet surrounding grades.
9. Remove all temporary support facilities, leaving perimeter erosion and sediment controls in place until revegetation is permanently stabilized and as instructed by the Navy.
10. Restore areas used for temporary support facilities (regrading and revegetation).
11. Demobilize equipment and personnel.

In addition to the Quality Control (QC) submittals and Safety and Health submittals required by the NSA Crane Contractor's Operations Manual and the Basic Contract, the Contractor shall submit the following to the Navy:

- Fieldwork reports in accordance with Part 6.4 Section C of the Basic Contract.
- Contractor 29 Code of Federal Regulation (CFR) 1910.120 Employee Training Certificates for all Contractor employees scheduled to be on-site.

- Erosion and Sediment (E&S) Control installation and inspection logs.
- Copies of NSA Crane specific permits.
- Certification and sampling results for backfill material and topsoil. The need for backfill should be kept to a minimum, especially for raised areas that were already higher than the surrounding grade. A minimum of one sample per borrow source is required.
- Waste transportation subcontractor name, address, contact name, telephone number, and United States Department of Transportation (USDOT) number.
- Hazardous waste disposal facility name, address, contact name, telephone number, and United States Environmental Protection Agency (USEPA) and State identification numbers, if required.
- Solid waste disposal facility name, address, contact name, telephone number, USEPA and State identification numbers.
- Waste profiles, complete waste characterization results, and any waste disposal facility pre-approval or approval documentation.
- Shipment Manifests (manifests and other documents required to ship waste).
- Delivery Certificates (verification that waste was received at identified waste disposal facility).
- Treatment and Disposal Certificates (verification that waste was successfully received and disposed).
- Decontamination Log.

The Contractor-provided information will be compiled in the project Contract Task Order (CTO) Closure Report to be prepared by the Navy.

#### Supplemental Specifications

In addition to the performance specifications presented in the NSA Crane Contractor's Operation Manual and in the Basic Contract, the Contractor shall perform the activities in accordance with the supplemental specifications provided below.

#### General Requirements

The Contractor is advised that this project is subject to Federal, State, and local regulatory agency inspections and review for compliance with environmental laws and regulations. The Contractor shall fully cooperate with any representative from any Federal, State, or local regulatory agency who may visit the job site and shall provide immediate notification to the Officer in Charge of Construction (OICC), who shall accompany them on any subsequent site inspections. The Contractor shall complete, maintain, and make available to the OICC, Facility, or regulatory agency personnel all documentation relating to environmental compliance under applicable Federal, State, and local laws and regulations. The Contractor shall immediately notify the OICC if a Notice of Violation (NOV), Notice of Deficiency (NOD), or similar regulatory notice is issued to the Contractor.

The Contractor shall be responsible for all damages to persons or property resulting from Contractor fault or negligence as well as for the payment of any civil fines or penalties which may be assessed by any Federal, State, or local regulatory agency as a result of the Contractor's or any subcontractor's violation of an applicable Federal, State, or local environmental law or regulation. Should an NOV, Notice of Noncompliance, NOD, or similar regulatory agency notice be issued to the Government or Facility owner/operator on account of the actions or inactions of the Contractor or one of its subcontractors in the performance of work under this contract, the Contractor shall fully cooperate with the Government in defending against regulatory assessment of any civil fines or penalties arising out of such actions or inactions.

After approval of the Contractor's Work Plan and before commencement of the work, the Contractor shall submit to the OICC the required certifications. As requested by the OICC, the Navy Representative for

this project may review and provide surveillance for the OICC to determine if Contractor's submittals comply with the contract requirements.

The Contractor shall be required to commence work on the approved Contractor's Work Plan within 5-calendar days after receiving the notice to proceed and to prosecute the work diligently after receiving the notice to proceed.

NSA Crane will remain in operation during the entire construction period. The Contractor shall schedule the work as to cause the least amount of interference with the Facility. Work schedules shall be subject to the approval of the OICC. Permission to interrupt Facility road services shall be requested in writing a minimum of 15-calendar days prior to the desired date of interruption. The OICC shall be notified two weeks prior to starting excavation activities.

Regular work hours shall consist of an 8½ hour daily period established by the OICC, Monday through Friday, excluding Government holidays. The Contractor should assume an 8½ hour daily period. Working outside of the 8½ hour daily period will require approval by the OICC. Work hours shall be established during the pre-IMWP implementation meeting.

On-site storage, laydown, material handling, and decontamination activities shall be limited to areas approved by the OICC.

During the progress of construction activities, the work area and adjacent areas shall be kept clean and free of rubbish, surplus materials, and unneeded construction equipment. No material or debris shall be allowed to flow or wash into watercourses, ditches, gutters, drains, or pipes. Upon completion of the work, the Contractor shall sweep paved areas and rake clean landscaped areas, and remove waste and surplus materials, rubbish, and construction facilities from the site.

#### Work Restrictions

Contractor personnel working on the Facility shall become familiar with and obey Facility regulations and keep within the limits of the work and avenues of ingress and egress as directed. Personnel shall not enter any restricted areas unless required to do so and until cleared for such entry. The Contractor's equipment shall be clearly marked for identification.

The Contractor shall indicate on the construction schedule any activity that could potentially interrupt Facility operations. The Contractor shall notify the OICC in writing 15-calendar days prior to the required interruption.

#### Facilities and Services

Provide utility permits in accordance with Part 4.13 Section C of the Basic Contract.

NSA Crane shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as indicated. The amount of each utility service consumed shall be charged to or paid for by the Contractor at the prevailing rates charged to NSA Crane or shall be furnished at no charge as indicated. The Contractor shall carefully conserve any utilities furnished without charge.

The point at which NSA Crane will deliver such utilities or services and the quantity available will be identified by NSA Crane.

The Contractor, at its expense and in a workman-like manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

Electric – Electrical power available, primary voltage is [2400 volt 3 phase, 3 wire, 60 cycle AC. Secondary voltages may be 120/208 or 120/240 volts.] Final taps and tie-ins to the NSA Crane utility grid will be made by NSA Crane electric shop.

Potable Water – Potable water is available at B-3245. Contractor shall provide potable water for use by all personnel.

Water – A reasonable quantity of water is available at NSA Crane at the Building 3245 at no charge. Provide backflow prevention devices on connections to potable water supplies. Under no circumstances will taps to NSA Crane fire hydrants be allowed for obtaining water.

Telephone – Telephone service is not available.

Sanitary Facilities - Provide temporary sanitary facilities for use by all personnel in accordance with Part 3.10 Section C of the Basic Contract.

Municipal Waste – Municipal waste storage and disposal is not available.

Sewer – Water resulting from personnel and equipment decontamination, excavation dewatering, and water from materials handling pad will be containerized for off-site disposal by the contractor.

#### Site Personnel Qualifications

Site Superintendent - The Contractor shall designate a Site Superintendent who shall have responsibility and authority to direct work performed. The Site Superintendent shall be responsible for the management and execution of all site activities in accordance with the IMWP, approved Contractor's Work Plan, and all Federal, State, and local laws and regulations. The Site Superintendent may not act in the dual role as the Project Quality Control Manager or Site Health and Safety Specialist (SHSS). The Site Superintendent shall have, as a minimum, the following qualifications:

- A minimum of 6-years site superintendent experience.
- Familiar with the requirements of the U.S. Army Corps of Engineers Safety - Safety and Health Requirements (EM 385-1-1).
- Experience in the areas of hazard identification and safety compliance.

Project Quality Control Manager - The Contractor shall designate a Project QC Manager who shall assist and represent the QC Program Manager in continued implementation and enforcement of the approved Project QC Plan. The QC Program Manager or Project QC Manager shall be physically present at the project site whenever work is in progress. The Project QC Manager may be dual hatted with the SHSS if qualified. The Project QC Manager shall have, as a minimum, the following qualifications:

- A minimum 2-years experience as a Project QC Manager.
- A minimum of 10-years combined experience in the following positions: project superintendent, QC manager, project manager, project engineer or construction manager on similar size and type of construction contracts which included the major trades that are part of this IM.
- Alternatively, the above 10-year combined experience requirement may be satisfied by providing a professional engineer registered in the State of Indiana having at least 2-years experience as a Project QC Manager.
- Familiar with the requirements of the U.S. Army Corps of Engineers Safety - Safety and Health Requirements (EM 385-1-1).
- Experience in the areas of hazard identification and safety compliance.

Site Health and Safety Specialist - The Contractor shall designate a Site Health and Safety Specialist (SHSS) who shall assist and represent the Contractor's Health and Safety (H&S) Manager in continued implementation and enforcement of the approved Site Health and Safety Plan (SSHSP). The SHSS shall have the on-site responsibility and authority to modify and stop work, or remove personnel from the site if working conditions change that may affect on-site and off-site health and safety. The SHSS shall be

physically present at the project site at all times. The SHSS may be dual hatted with the Project QC Manager. The SHSS shall have, as a minimum, the following qualifications:

- A minimum of 5-years safety work on similar projects.
- 30-hour OSHA construction safety class or equivalent within the last 5-years.
- An average of at least 24 hours of formal safety training each year for the last 5-years.
- Competent person status for at least the following:
  - excavation,
  - health hazard recognition, evaluation and control of chemical, physical and biological agents, and
  - personal protective equipment and clothing to include selection, use and maintenance.
- First aid and cardiopulmonary resuscitation qualified.

### Quality Control

Approval of the QC Plan is required prior to the start of construction. The OICC reserves the right to require changes in the QC Plan and operations as necessary to ensure the specified quality of work. The Contracting Officer reserves the right to interview the QC Manager at any time in order to verify his/her submitted qualifications.

The OICC shall be notified, in writing, of any proposed changes to the QC Plan, at a minimum of 7-calendar days prior to the implementation of the proposed change. Proposed changes must be approved by the OICC.

Combined Contractor Production Report/Contractor Quality Control Report (CPR/CQCR) is required for each day that work is performed. CPR/CQCRs are to be prepared, signed, and dated by the Project QC Manager.

### Safety and Occupational Health Requirements

The SHSS and Contractor representatives who have a responsibility or significant role in accident prevention shall attend the pre-IMWP implementation meeting. The purpose of the meeting is for the Contractor and the OICC to become acquainted and explain the functions and operating procedures of their respective organizations and to reach mutual understanding relative to the administration of the overall project before the initiation of work. The Contractor shall discuss the details of the work identified in the approved Contractor's Work Plan and discuss which construction phases will require significant or additional activity hazard analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of additional hazard analysis shall be established to preclude project delays. Lastly, deficiencies in the submitted accident prevention report will be brought to the attention of the Contractor at the meeting. The Contractor shall revise the plan to correct deficiencies and resubmit the plan for acceptance.

New employees (prime or subcontractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

If unforeseen materials hazardous to human health are encountered during operations, then that portion of the work shall be stopped and the OICC shall be notified immediately. Within 14-days, the Navy will determine if the material is hazardous. If the material is not hazardous or poses no danger, the OICC will direct the Contractor to proceed without change. If the material is determined to be hazardous or to pose danger, and handling of the material is necessary to accomplish the work, the Contracting Officer will issue modifications to the proposed work.

Equipment shall be operated by designated qualified operators. Proof of qualifications shall be kept on the project site for review. Manufacturer's specifications or owner's manual for the equipment shall be on site and reviewed for additional safety precautions or requirements. Such additional safety precautions or requirements shall be incorporated into the activity hazard analysis. Mechanized equipment shall be inspected in accordance with manufacturer's recommendations for safe operations by a competent

person prior to being placed into use. Daily checks or tests shall be conducted and documented on mechanized equipment by designated competent persons.

The competent person for excavations performed as a result of contract work shall be on-site when excavation work is being performed, and shall inspect and document the excavations daily prior to entry by workers. The competent person must evaluate all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly.

#### Environmental Controls

The need for an E&S Control Plan is included in the IMWP. The E&S Control Plan will describe the location and description of all erosion and sediment control measures, a sequence of construction to be followed, graphic details of all E&S control measures to be used, and an approval sign-off block containing the names of the Facility and Contractor contacts, whose signatures indicate plan acceptance/approval.

The Contractor shall adhere to and strictly follow the E&S Control Plan and maintain all measures used during construction. Modifications to the E&S Control Plan shall be submitted to the OICC, and as required, to the Indiana Department of Environmental Management (IDEM) for approval. No modifications to the E&S Control Plan will be allowed until these changes have been approved by the OICC and IDEM and three copies of the approved modifications have been submitted to the OICC and one copy of the approved modifications have been submitted to IDEM.

#### Transportation and Disposal of Contaminated Material

The Contractor shall be solely responsible for complying with all Federal, State, and local requirements for decontamination of vehicles, equipment, and containers and shall bear all responsibility and cost for any noncompliance. In addition to these requirements, the Contractor shall perform the following:

- Visually inspect all vehicles, equipment, and containers leaving the work site for proper decontamination.
- Prepare and maintain a written decontamination log.

The Contractor shall be solely responsible for complying with all Federal, State, and local requirements for transporting contaminated materials through the applicable jurisdictions and shall bear all responsibility and cost for any noncompliance. In addition to these requirements, the Contractor shall perform the following:

- Inspect and document all vehicles and containers for proper operation and covering.
- Inspect all vehicles and containers for proper markings, manifest documents, and other requirements for waste shipment.

All contaminated materials removed from the site shall be disposed in a treatment/disposal facility permitted to accept such material.

The Contractor shall properly dispose of Investigation-Derived Waste (IDW), personnel protective equipment, and miscellaneous wastes associated with implementation of the IMWP, including sampling and analytical wastes that are generated by the contractor or Navy representatives.